U.PORTO

FEP FACULDADE DE ECONOMIA
UNIVERSIDADE DO PORTO

Women in leadership: a business case or a matter of social justice? Evidence from European IPOs' valuation

Maria Luís de Moura e Roxo Espírito Santo

Dissertation
Master in Finance

Supervised by
Miguel Augusto Gomes Sousa, PhD

2022

Biographical Note

Maria Luís de Moura e Roxo Espírito Santo was born in Porto in 1998. After wishing to be a ballet dancer, pianist and engineer, she decided to pursue a Management degree at the School of Economics and Management of the University of Porto (FEP). Following the completion of her bachelor's in 2019, she enrolled in the Master in Accounting and Management Control (also at FEP), which she found out not to be her true passion. Instead, it turned out to be the Master in Finance the right choice for her, and now she is completing the master with the present dissertation.

Maria Luís was also involved in other activities during her academic life. She was a monitor of the international 1st year students of Management and Economics Bachelors by giving them support classes. In addition, she has done two short-term internships in KPMG (Audit) and Sogrape (M&A). She is currently the CEO of Já T'Explico an NGO run by university students with the mission of giving children with socioeconomic needs the chance to build their own future through education.

Currently, she is starting her professional career at Deloitte's Financial Advisory department.

Acknowledgements

I believe that the best part of any experience is being able to share it with others and have their help to exploit the best of it. During the accomplishment of this dissertation and master's, I had the chance to work with exceptional people and receive support from many that need to be acknowledged.

Firstly, I must express my deepest gratitude to my supervisor, Professor Miguel Sousa, who not only is the reason I am doing this master's (since he made me fall in love with Finance in the bachelor's lectures) but also was the best supervisor I could have asked for. For all his guidance, total availability, and his endless patience, I am sincerely thankful.

Secondly, I want to thank all my master's Professors who taught me the fundamentals of Finance and prepared me for the development of this dissertation and my future career. Additionally, I must also thank Professor Vitorino Martins for his help with the econometric analysis.

Thirdly, to FEP, I must thank for being my second home for the past six years and for making me grow so much personally and academically. I also owe the friendships I made throughout the years and all the happy moments I lived there.

In addition, to my master's colleagues, for making this experience even more rewarding and meaningful, I must thank you for all your friendship and mutual support.

To all my friends, for always being there for me when needed and for hearing all my WhatsApp audios (or mini podcasts) sharing this journey's ups and downs.

Last but not least, to my family for their constant unconditional love and support. In particular, to my parents (Cristina and António), sisters (Sofia and Mafalda), brother-in-law (Diogo), nephew (Tomás) and niece (Sara), who are my safe place and my inspiration to be my best self. A special thanks must be done to my "unofficial supervisor", my sister Mafalda, for hearing me nonstop about my doubts and insecurities, and for trying to understand my research which is almost a different language for her.

I dedicate this dissertation to all women striving to follow their dreams and gain their space in a society still far from gender equality.

Abstract

Over the years, the gender gap has been gaining increased attention by society as efforts to close this gap did not lead, at least for now, to the desired outcomes. The endeavours made by policymakers and corporate leaders towards increasing gender equality among companies' leadership have been calling for studies to assess the impact of these initiatives.

This study aims to contribute to this body of knowledge by analysing the impact of female representativeness in companies' leadership on IPO's valuation and potential influence of national culture on this relation. The sample consists of 342 IPO-issuing firms listed on European stock exchanges between 2000 and 2020.

Our findings show weak support for a positive relation between the board's female representation and underpricing across the entire sample period and, predominantly, no relation between the level of women executives and IPOs underpricing. Stronger evidence of boards' gender diversity impact is observed in the last decade (2010-2020). Regarding the moderating effect of culture, some evidence was found to support that the Power Distance and the Uncertainty Avoidance dimensions influence the relation between board gender diversity and underpricing.

Overall, the results provide evidence of the existence of gender bias in IPOs' valuation and that cultural differences might explain some of this bias.

Keywords: IPO, underpricing, gender diversity, national culture, Hofstede, Europe.

JEL-Codes: G14, G24, G34, G41

Sumário

Ao longo dos anos, as disparidades de género têm recebido maior atenção por parte da sociedade, dado que os esforços para as diminuir não levaram, pelo menos até agora, aos resultados desejados. Os esforços dos decisores políticos e das lideranças das empresas para aumentar a igualdade de género nos cargos de liderança mostram a necessidade de um estudo mais aprofundado do impacto destas iniciativas.

Este estudo tem como objetivo contribuir para esta área de conhecimento ao analisar o impacto da representatividade feminina na liderança das empresas na valorização das Ofertas Públicas Iniciais (OPI) e a possível influência da cultura nessa relação. A amostra é composta por 342 empresas emitentes cotadas nas bolsas de valores europeias entre 2000 e 2020.

Os resultados mostram uma fraca relação positiva entre a representatividade feminina no Conselho de Administração e o *underpricing* em todo o período da amostra e, predominantemente, nenhuma relação entre o nível de mulheres nas equipas de gestão e o *underpricing* das OPIs. Na última década (2010-2020) verificou-se uma forte evidência do impacto da diversidade de género nos Conselhos de Administração no retorno inicial das OPIs. Em relação ao efeito moderador da cultura, encontramos alguma evidência de que as dimensões *Power Distance* e *Uncertainty Avoidance* influenciam a relação entre a diversidade de género no Conselho de Administração e o *underpricing*.

Em geral, os resultados levam a querer que existe um enviesamento de género na avaliação das OPIs e que as diferenças culturais podem explicar parte deste enviesamento.

Palavras-chave: Oferta Pública Inicial, *underpricing*, diversidade de género, cultura nacional, Hofstede, Europa.

Classificação JEL: G14, G24, G34, G41

Table of Contents

List of Tables

List of Figures

1. Introduction

Over the years, the gender gap has been gaining increased attention by society as the efforts to close this gap did not lead, at least for now, to the desired outcomes. As of 2021, the world population is composed of approximately 49.6% of women, which entails almost demographic equality (United Nations Population Division, 2022). However, according to the most recent World Economic Forum's "Global Gender Gap Report" (2022), the Global Gender Gap Index (that measures, in percentage, the distance to parity[1]) shows that we are currently at an average distance of 68.1%. Consequently, it translates into a time span of 136 years to close the global gap (World Economic Forum, 2022). Thus, the demographic parity is not evident in several domains, such as the economic, political, health, among others. Despite the endeavours, there is still a significant underrepresentation of women in leadership positions in the corporate world. For example, in the European Union (E.U.), the female representativeness at the board level is almost 32%, at the senior executive level is around 20%, and organisations with a woman CEO represent only a tiny proportion (8.3%) of the organisations covered by EIGE's database (European Institute for Gender Equality, 2022a, 2022b). Notwithstanding, the positive historical evolution in women's representativeness is notorious. For example, by 2003, there was a representation of only 8.2% of female board members in the E.U., which implies an increase of around 23.8 pp until 2022 (European Institute for Gender Equality, 2022b)[2].

This inequality stresses the need for academic studies to focus on potential differences in company-related aspects because of this increase of women in leadership. Thus, with this study, we intend to analyse the impact of female representativeness in companies' leadership on IPO's (Initial Public Offering) valuation, i.e., underpricing. According to several authors (e.g., Beatty & Ritter (1986); Mok & Hui (1998)), underpricing is caused by investors' uncertainty about IPO firm's value, and so this study wants to assess whether the female presence in firms' leadership impacts this uncertainty regarding company's value. In addition, we intend to study the potential influence of national culture on this relation which has been jointly analysed with other business/finance topics. The research conducted until today

[1] The methodology applied for the index computation can be found in Appendix B of the "Global Gender Gap Report" (2022).

[2] On June 6, the European Commission and Council reached an agreement on the "Women on Boards" Directive (proposed by the Commission in 2012) with the aim of improving gender equality among listed companies' boards. Further information available at https://www.europarl.europa.eu/news/pt/press-room/20220603IPR32195/women-on-boards-deal-to-boost-gender-balance-in-companies

addressing gender diversity and in particular this important moment in the company's lifecycle – the IPO – seems to be scarce, and the conclusions are conflicting. In accordance, so far, very little attention has been paid to the impact of female presence in leadership roles on IPOs' underpricing and the existent research present conflicting findings. Most of the studies examine the impact of board level's female presence on IPOs' underpricing. Although the majority of the studies have not found enough evidence to confirm the relation between the two variables (Arora & Singh, 2020; Handa & Singh, 2015; Kaur & Singh, 2015, 2019; McGuinness, 2019; Teti & Montefusco, 2021); other findings suggest that there is a negative relation (Badru et al., 2019a); and also some authors advocate that there is a positive relation between female board representation and underpricing (Reutzel & Belsito, 2015).

As a result, this research aims to contribute to the existing literature in four different ways. Firstly, in terms of geographic scope, since it is used a sample of firms that became listed on European stock exchanges between 2000 and 2020 and other studies focused on different markets. Secondly, regarding the main independent variables, our study will not be restricted to female board representativeness, but it will also analyse the presence of women in the top management team. Thirdly, we intend to add national culture variables to the models to capture firm-country cultural differences, as we would like to test if the country's culture (represented by Hofstede's (2010) six cultural dimension) can influence the impact of female representativeness on company-related aspects, more specifically on uncertainty regarding IPO firms' valuation. Finally, the results of this study are expected to contribute to the body of knowledge regarding the impact of female leadership on IPOs, which is a still an understudied topic.

Following previous research, the approach to empirical research adopted for this study was a multiple regression analysis (complemented with a univariate analysis). Our base model sample consists of 342 IPO-issuing firms over the 2000-2020 period, covering 13 European countries.

Our findings show weak support for a positive relation between the board's female presence and underpricing across the entire sample period and, predominantly, no relation between the level of women executives and IPOs underpricing. Additionally, the results showed that the positive relation between the representation of female directors and underpricing is driven by IPOs conducted in the second decade of our sample, 2010-2020 (where strong statistical evidence was found). Regarding the moderating effect of culture on the previously mentioned relation, it was found some evidence that the Power Distance and

the Uncertainty Avoidance dimensions reduces the relation between board gender diversity and underpricing.

The remainder of the dissertation is organized as follows. Chapter 2 reviews the existing literature on IPOs, the implications of female representativeness in the corporate world, the impact of female representation on IPOs, and the Hofstede's national culture approach. Chapter 3 presents the research questions aimed to be answered and the hypothesis to be tested. Chapter 4 describes the methodology applied and data used. Chapter 5 presents the results of our analysis and the discussion with existing literature. Chapter 6 outline the main conclusions, the contributions of the study, its limitations, and suggestions for future research.

2. Literature Review

2.1. Initial Public Offerings

The IPO is a landmark event in a company's life therefore, the decision to undertake it is subject to detailed analysis and evaluation by its executives.

Theorists have developed over the years explanations for the companies going public. One of these justifications relies on the optimal capital structure and the role of external financing in minimising the firm's cost of capital, thus increasing firm's value (Modigliani & Miller, 1958, 1963; Scott, 1976). Within the same line of reasoning, some argue that the issuance of common stocks is explained by the pecking order theory, being the external equity financing the managers' last resort (Myers & Majluf, 1984).

Additionally, other authors believe that the IPO is a good and easy exit route for venture capital funds (Black & Gilson, 1998). The greater dispersion of the company's ownership is another reason, suggesting that the public issuance is an opportunity for initial owners to sell their company and maximize the proceeds (Chemmanur & Fulghieri, 1999; Zingales, 1995).

Moreover, Zingales (1995) presents the IPO as a way of the firm establishing a market price/value that will be used as a reference for future takeover activities. Likewise, the creation of publicly traded stock is seen as a currency that can be used as a form of payment in future Mergers and Acquisitions (M&A) activities (Brau et al., 2003; Celikyurt et al., 2010).

Furthermore, one of the main reasons for companies becoming listed is the marketing role that an IPO can have by increasing reputation and publicity (Demers & Lewellen, 2003; Maksimovic & Pichler, 2001). In addition, analyst coverage may be another motive for firms engaging in public offerings since the recommendations post-IPO are usually positive (Bradley et al., 2003).

Empirical studies have been made to verify if theory represents the practice in terms of these reasons behind going public. Brau and Fawcett (2006) find that the main motivation for Chief Financial Officers (CFOs) is the possibility of using publicly traded stocks as means of payment in M&A deals. Another reason that shows strong support by CFOs is the setting of a value for the company and, conversely, the goal of minimising the cost of capital reveals low support by managers (Brau & Fawcett, 2006).

Moreover, one of the puzzling phenomena identified in the IPO literature is underpricing. Over the last five decades, the IPO underpricing has been puzzling researchers ever since Ibbotson (1975) first rigorously verified these significant initial positive returns. The author arrives to an average initial performance of 11.4% when using a sample of U.S. firms that

became public in the 1960s (Ibbotson, 1975). After this seminal study, several other papers have followed the aim of either confirming the phenomenon or explaining it.

In fact, Loughran and Ritter (2004), by analysing U.S. IPOs have shown that the average first-day returns did not remain constant over time. The value moved from 7% in the 1980s to more than double in the following decade (15%) and then, during the tech bubble (1999-2000), the figure skyrocketed to 65%, before reverting in 2001-2003 to 12% (Loughran & Ritter, 2004).

Although it varies in magnitude and over the years, the underpricing is a global phenomenon (Loughran et al., 1994). Conversely, it is not unanimous the reasons for this puzzle and academics are continuously trying to find evidence that corroborates some of the main theories in the literature and, consequently, to find the determinants of the underpricing.

There are several theories and explanations for this phenomenon. Most of them are related to information asymmetry. Information asymmetry can impact all parties involved in IPOs: underwriters, issuers, and investors. Regarding the relation between the issuing firm and the investors, some authors hypothesise that the underpricing can be explained by the ex-ante uncertainty about the value of the IPO firm (Beatty & Ritter, 1986; Mok & Hui, 1998). Relatively to the information asymmetry between the issuer and the underwriter, some argue that the latter is better informed thus, the underpricing is a compensation for revealing superior information, while it is also a way to reduce their marketing and promotion costs of underwriters (Baron, 1982; Baron & Holmström, 1980). Another relevant theory linked with information asymmetry is the winner's curse, introduced by Rock (1986) and empirically supported by other authors (Brau & Fawcett, 2006; Carter & Manaster, 1990). This theory justifies the existence of underpricing with the need of guaranteeing the participation of uninformed investors in the IPO's market by compensating the adverse selection that may exist for these investors (Rock, 1986). The signalling theory is another possible explanation of this phenomenon based on the rationale that good quality firms do not worry about bearing the underpricing cost since they have better information about their true value, which sooner or later will appear and contribute to subsequent offerings (Allen & Faulhaber, 1989; Grinblatt & Hwang, 1989; Ibbotson, 1975; Welch, 1989).

Apart from information asymmetry justifications, other theories have emerged to justify underpricing, such as the litigation avoidance theory (Hughes & Thakor, 1992; Ibbotson, 1975; Tiniç, 1988); the theory related with the desire to ensure a greater ownership dispersion

(Booth & Chua, 1996; Brennan & Franks, 1997); and the cascade effect that can be caused by underpricing (Welch, 1992).

2.2. Female Representativeness in the Corporate World

The aim of gender equality is desired in all fields of our society: education, politics, health, and economics. Thus, female representation has become a major topic, and it has earned the interest of policymakers, corporate leaders, and investors. Particularly, in the last decades, we have been witnessing an effort by some countries towards gender parity in the form of gender quotas, i.e., mandatory requirements, and non-binding recommendations.

In the corporate world, these requirements and recommendations focus predominantly on the composition of boards (mainly the Board of Directors, BoD). Norway, Spain, Finland, Israel, and Italy are some of the countries that have gender board quotas on listed companies and/or state-owned firms (Terjesen et al., 2015). Regarding Corporate Governance Codes that include recommendations on the female representation, the list of countries that have them is broader, including, for example, Germany, Malawi and United Kingdom (Terjesen et al., 2015). Therefore, the increased gender diversity in the Board of Directors promoted new studies about the impact of this phenomenon on corporate performance. Notwithstanding, it is important first to denote the existing evidence concerning gender and leadership roles that have been leading to prejudice against female leaders.

A seminal study addressing the relation between sex role stereotypes and required managerial characteristics concludes that there is a perceived similarity between characteristics of successful middle managers and men in general, while the same is not verified with women in general (Schein, 1973). However, the author finds that some (few) characteristics and behaviours that are required for managers are more usually associated with women in general than men in general, such as "Understanding, Helpful and Intuitive" (Schein, 1973, p. 100).

An extension of the aforementioned study, which also examined groups of managers (women and men), also reaches the same general conclusion, despite verifying that similarity between successful managers characteristics and women characteristics increases significantly when women are described as managers, and it intensifies when they are already depicted as successful managers (Heilman et al., 1989). These conclusions give evidence for the decrease in stereotypic considerations when given additional information about the women subjects (Heilman et al., 1989).

These studies give evidence to the role congruity theory by Eagly and Karau (2002). This theory proposes that different perceptions of gender roles and leadership roles can lead to prejudice against female leaders in two different forms: by perceiving women as having characteristics not aligned to the expected and desired traits of a leader; and by evaluating negatively female behaviour apparently fulfilling the leader's stereotype (Eagly & Karau, 2002). Additionally, a study by Kawakami et al. (2000) tries to resolve the paradox of female leaders regarding their behaviour in order to be both liked and respected. As such, they find that female leaders need to be both mindful and cool (a masculine trait) to be perceived as a better leader and avoid the paradox (Kawakami et al., 2000).

In terms of differences between women and men and, particularly, between female and male leaders, one vastly researched topic is their attitudes towards risk. Women's risk aversion is generally assumed by society, although it seems not to exist a clear consensus in the literature.

A stream of research has proved over the years that women are more risk-averse than men and, specifically, the majority of studies use experiments in the context of objective probability to find gender differences (e.g. the studies of Eckel and Grossman (2002) and Borghans et al. (2009)).

Additionally, when analysing risk attitudes of women investors towards mutual fund investment decisions, a study proves that they are more risk-avert than men (Dwyer et al., 2002). However, if the authors controlled for investors' knowledge about financial markets and investments, this gender difference significantly reduced, suggesting that the gender effect might not exist (Dwyer et al., 2002).

Despite these results, some authors reached different results, such as verifying that under the same opportunity sets, there are no gender differences in risk propensity when making financial decisions (Schubert et al., 1999). Thus, they suggest that the stereotypic perceptions of gender differences in risk attitudes are prejudice and not a fact (Schubert et al., 1999).

Maxfield et al. (2010) presented a not so common avenue of analysis which is to study specific managerial contexts other than portfolio allocation. The results of this study prove that it does not exist gender differences being the motivations behind the decision-making process the same for both men and women (Maxfield et al., 2010).

Conversely to experiments entailing objective probabilities, the conclusions are different when analysing gender differences in attitudes towards financial risk under uncertainty. For example, Sarin and Wieland (2016) observed real events (bets on award shows or sports

events winners) and concluded that there are no differences in risk aversion between women and men (although verifying, once more, gender-biased risk aversion for gambles with known probabilities).

In terms of gender studies analysing possible differences in the corporate world, the impact of female leadership on firm performance is one of the most researched topics.

Some studies focused on Spanish listed firms from 1995 to 2000[3] conclude that there is a positive effect of gender diversity on firm value measured by Tobin's Q (Campbell & Mínguez-Vera, 2008; Campbell & Minguez Vera, 2010). Norway, a country subject to regulatory requirements, was also studied however, the authors aimed to see the after-effects, so the period in analysis starts in 2003 (Matsa & Miller, 2013). The authors prove that due to increased labour costs and employment level, the short-run profits were negatively affected by gender quotas and, as predicted, the companies with lower equality on their boards show stronger effects (Matsa & Miller, 2013).

Further studies were also conducted for the Danish (Rose, 2007) and the United Kingdom (Gregory-Smith et al., 2014) realities, and both lead to no conclusion regarding the existence of a link between female board representation and firm performance measures. Conversely, Bennouri et al. (2018) find, for a 9-year (2001-2010) French sample, a positive relation between accounting performance measures and the proportion of female directors. Conclusions from a study performed for a broad range of European countries and focusing also on female representativeness on committees lead to a positive effect of female representation on firm performance (Green & Homroy, 2018).

Outside Europe, researchers are also trying to find a link between female representation at the board level and financial performance. The conclusions are once more conflicting and even within the same country. Adams and Ferreira (2009) find that, in a sample of U.S. firms for the period 1996-2003, the impact of gender diversity is negative, although it leads to a positive impact in terms of the monitoring role of the boards. In contrast, another U.S. study covering a subsequent period concludes for a positive relation between women's representation at the board level and firm performance (including the same measures as the previous study – return on assets and Tobin's Q) (Conyon & He, 2017). Addressing Chinese companies, a study concludes for a strong positive relation between women presence on boards and firm performance, being that it is stronger the effect on executive than in independent directors (Liu et al., 2014).

[3] A period preceding the implementation of gender quotas at the board level in the country, in 2007.

The link between firm performance and the presence of female directors on the boards is usually related to board effectiveness in the sense that it mediates the impact of female representativeness on corporate performance.

A study of Norwegian firms analysed the impact of female directors on board effectiveness represented by the board's strategic and operational control and concluded that there is a positive relation between the percentage of women directors and board strategic control (Nielsen & Huse, 2010). Particularly, the authors found that this effect is moderated by reduced levels of conflict and increased quality of board development activities, thus entailing that to generate positive outcomes, the appointment of female directors needs to be accompanied by favourable conditions (Nielsen & Huse, 2010).

Additionally, with the aim of helping policymakers define the optimal level of female representativeness on the board, a study with firms from Spain, Italy and France finds that when the percentage is higher than 33%, the relation of female presence on boards and board monitoring tasks is positive (De Masi et al., 2021).

Regarding the relation between board effectiveness and corporate performance, Martinez-Jimenez et al. (2020) studied a sample of Malaysian companies and proved that the presence of female directors improve firm performance (measured by return on assets) and also decrease stocks' volatility, being that these effects are significantly mediated by board monitoring.

Conversely, other authors not only found no statistically significant effect of board gender diversity on firm performance but also concluded that the relation between female representation and board effectiveness is negative (Martinez-Jimenez et al., 2020). Despite the conflicting results, a positive and statistically significant relation was found between board effectiveness and firm performance (Martinez-Jimenez et al., 2020).

2.3. Initial Public Offerings and Female Representation

Corporate governance concerns are indeed gaining increased attention from firms' stakeholders. These aspects can affect all sorts of corporate actions and, therefore, must be taken into consideration when assessing and analysing these activities.

Since the IPO is a critical moment for a company's life – and when it begins to be much more subject to public scrutiny – it is reasonable that involved parties will also consider governance-related aspects when evaluating the transaction.

Specifically, regarding female representativeness in IPO firms, not many studies focus on this topic, although it seems to be a growing area of research. Many of them analyse the

impact of this representativeness on the 1st-day initial return (underpricing); and others explore aspects related to capital allocation, quality of earnings forecasts in the IPOs' prospectus, among others.

The literature addressing the effect of female representativeness on underpricing seems to be inconclusive since some authors do not find any relation, and others either find a positive or a negative one. It is also important to note that most studies focus on the proportion of women at the board level while a few analyse other roles (such as the Chief Executive Officer (CEO) or other executive/management functions).

Mohan and Chen (2004) were amongst the first authors analysing the influence of female leadership on the valuation of IPOs at the beginning of this century. Using a sample of U.S. newly listed firms between 1999 and 2001, the authors find no difference depending on the CEO's gender, neither in terms of underpricing (after controlling for company-related variables) nor in firm characteristics (Mohan & Chen, 2004).

With a similar conclusion, two recent studies conducted in Hong Kong's market during 2005-2009 also conclude for a weak relation between the presence of female directors and underpricing (McGuinness, 2018, 2019). Additionally, the author reaches the same conclusion by studying women's representation at the senior manager level (McGuinness, 2019).

In addition, a study of Indian issues from 2001 to 2012 that analysed the proportion of women directors finds a non-significant impact as well on initial IPOs' returns (Handa & Singh, 2015). Another similar research[4] indicates that there is a negative but insignificant relation between the variables (Kaur & Singh, 2015). Recently, Arora and Singh (2020) also studied the Indian capital market, however with a timespan comprehending the mandate of the Companies Act[5] - from 2012 to 2018. However, the authors find, once more, no statistically significant confirmation of the presented negative relation between gender diversity and underpricing (Arora & Singh, 2020).

Although not studying directly and exclusively this impact, there are other researches where the variable related to the female representativeness at the Board of Directors prove to be not statistically significant when used to explain underpricing (Kaur & Singh, 2019; Teti & Montefusco, 2021). Regarding the study of Kaur and Singh (2019), the goal was to analyse the relation between corporate reputation and underpricing using a sample of firms doing

[4] Also addressing the Indian market in the period that goes from 2007 and 2013.
[5] This Act approved in 2013 mandated some firms to have at least one women director at the board.

their IPOs in the Indian capital market during 2007-2016. The authors show that corporate reputation, measured by the firm size, is highly significant to explain underpricing, being this relation negative (Kaur & Singh, 2019). In what concerns the latter study mentioned, it examines the Italian market (between 2000 and 2016) and the 1st-day initial returns of its IPOs by linking this variable with corporate governance variables (Teti & Montefusco, 2021).

Conversely, there is evidence for the existence of a positive relation between female representativeness at the Board of Directors and underpricing thus, investors react negatively when the proportion of women is greater (Reutzel & Belsito, 2015). In addition, by analysing IPO firms from the U.S. in the 1997-2007 period, the authors prove that after the Sarbanes-Oxley Act, this positive relation has weakened (Reutzel & Belsito, 2015). Recently, a positive relation was also found between the existence of at least one female director and underpricing using a sample of U.S. IPOs (Rau et al., 2022). These authors suggest that the effect might be related to an increased institutional investors' demand for gender diversity therefore, they propose that there is a lack of incorporation of soft information on the offer price by the underwriters (Rau et al., 2022).

Ultimately, some studies corroborate a statistically significant negative relation between the proportion of female directors and underpricing, thus entailing a quality signal of the issuer. One of these studies uses a sample of Malaysian IPOs between 2005 and 2015 and supports the arguments that gender diversity is positive and can positively impact the company (Badru et al., 2019a).

As aforementioned, besides the puzzling underpricing, the literature concerning the impact of female representativeness on IPOs has extended to other IPO-related aspects.

One of these avenues is the amount of capital raised which was studied by Badru et al. (2017), and they conclude that there is no significant association between the proportion of female directors and the amount of the IPO's proceeds when studying Malaysian IPOs from 2005 to 2015. Later on, the same authors analysed the allocation of the capital raised and how the underlying decisions can be affected by the gender diversity at the board level (Badru et al., 2019b). Using a similar sample from the previous study, they conclude that there is a positive relation between the proportion of women at the Board and the allocation of IPO capital for growth investment (Badru et al., 2019b).

McGuinness, in his studies (2018, 2019), finds other relevant results, such as stronger post-listing returns in the presence of a greater proportion of female directors however, this is proved only at boards where there are no family ties between directors. Additionally, he

proves that the senior management teams' female presence is positively linked with initial valuation multiples (Tobin's Q, Price-to-Book ratio adjusted and Price-to-Book ratio) and underwriter quality (McGuinness, 2019). Conversely, the author's results indicate a negative association between Research and Development (R&D) expenditures and both female senior managers and female directors' proportions (McGuinness, 2019).

Regarding the analysis of Malaysian companies that became public during the period 2005-2012, it is concluded that the female representativeness on the board does not have any significant linear or non-linear effect on the firms' financial performance (measured by Return on Equity (ROE), Return on Assets (ROA) and Tobin's Q) (Ming & Hock Eam, 2016). The authors only evidence a significantly positive relation with ROE for the companies of the 80th percentile and when the proportion of women directors is greater than 15% (Ming & Hock Eam, 2016).

Regarding the monitoring role of women, a study of Malaysian IPO-firms during the period 2002-2012 proves that, despite the expectations, there is a significant negative relation between the presence of female directors in the audit committees and the accuracy of earnings forecast in IPOs prospectuses (Ammer & Ahmad-Zaluki, 2017).

An experimental study conducted by Bigelow et al. (2014) has simulated IPOs for MBA U.S. students and concluded that there is a prejudice towards female CEOs (with identical academic/professional backgrounds and firm financials), thus entailing that IPOs runed by women are seen as less attractive.

2.4. Hofstede's National Culture Framework

From the very outset, Geert Hofstede's aim with his national culture model (1980) was to help policymakers, organisations and scholars to understand cultural differences and, most importantly, to identify the elements that compose each culture. As such, the author defines culture as a "software of mind" which, although not restricting one's behaviour and actions, makes them predetermined by the social environments and experiences each one has in her/his life (Hofstede et al., 2010). The concept of value is closely related to this notion, considered by Hofstede (2001) the core of culture. In fact, the research undertaken by the Dutch social psychologist used surveys made to employees of various IBM's subsidiaries, which relied extensively on questions about people's values (Hofstede, 1980).

The classic Hofstede cultural model (1980) (developed with factor analysis) comprehends four main dimensions derived from theory and statistical analysis: Power Distance, Individualism versus Collectivism, Masculinity versus Femininity and Uncertainty Avoidance.

Subsequently, additional research discovered two relevant dimensions to add to this study: Long-term versus Short-term orientation and Indulgence versus Restraint (Hofstede, 2001; Hofstede et al., 2010). All these dimensions have a country score that varies from 0 to 100.

These six dimensions are analysed in our study thus, it is essential to present their definitions.

The Power Distance (measured by the Power Distance Index, PDI) is defined as "the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally" (Hofstede, 2001, p. 98). Consequently, in a low-PDI country, people strive to minimise inequality and see hierarchy as a matter of convenience (Hofstede, 2001). Conversely, in countries exhibiting a large degree of PDI, people accept and understand the need for hierarchy and unequal rights (Hofstede, 2001).

As for the Individualism dimension (measured by the Individualism Index, IDV), Hofstede (2001, p. 161) defines it as "a society in which the ties between individuals are loose: everyone is expected to look after him- or herself and his or her immediate family only". By contrast, in a Collectivism society, people are from birth embedded in groups with tight social bonds, within which support and protection are expected, based on loyalty and prioritisation of the group's well-being (Hofstede, 2001).

The author defines Masculinity (measured by the Masculinity Index, MAS) as "a society in which social gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life" (Hofstede, 2001, p. 297). Contrarily, in a Femininity society, gender roles overlap, meaning that men are expected to be tender, valuing cooperation, modesty and quality of life (Hofstede, 2001).

Regarding Uncertainty Avoidance (measured by the Uncertainty Avoidance Index, UAI), the researcher defines this dimension as how people lead and feel comfortable with uncertainty and ambiguity (Hofstede, 2001). As a result, in high-UAI countries, people feel nervous about the unknown and have the need for predictability therefore, they have strict rules and are intolerant to different behaviours and ways of thinking (Hofstede, 2001).

The fifth dimension is the Long Term versus Short Term Orientation (measured by the Long Term Orientation Index, LTO) and it represents how societies face the time horizon, differentiating cultures that value the present and its relation with the past and cultures that emphasize the future and its challenges (Hofstede, 2001). In particular, Long Term Orientation is associated with "persistence and thrift" and Short Term Orientation with

"personal stability and tradition" (Hofstede et al., 2010, p. 239).

Finally, the most recent dimension added to the model is Indulgence versus Restraint (measured by the Indulgence versus Restraint Index, IVR) and its two poles represent the degree of freedom society rewards its citizens to pursue their desires (Hofstede et al., 2010). Specifically, a society with high-IVR "allows relatively free gratification of basic and natural human desires related to enjoying life and having fun"(Hofstede et al., 2010, p. 519). By contrast, a culture with low-IVR (or high Restraint) "suppresses gratification of needs and regulates it by means of strict social norms" (Hofstede et al., 2010, p. 521).

3. Research Questions and Hypothesis

Based on the extant literature reviewed in the previous chapter, this study intends to contribute to the IPOs and corporate governance's research areas. Additionally, we aim to provide evidence for practitioners and policymakers about gender equality and its implications at the firm level with our conclusions.

Therefore, given the contradictory conclusions reached about the impact of women's presence in leadership positions on firms' performance and IPO underpricing, the first research question that we intend to answer is the following:

Research Question 1 (RQ1): Does the female representativeness in firm's leadership impact the IPOs' valuation (underpricing)?

The focus on the valuation aspect relies on IPO research's attention to the underpricing phenomena.

Considering underpricing and its relation with female representation, literature does not suggest any clear orientation about the direction of this relation, if positive or negative or even no relation. However, through the lens of role congruity theory (Eagly & Karau, 2002), it can be argued that a company with a greater proportion of women in leadership roles will be negatively perceived by investors, thus entailing a greater underpricing (i.e., greater uncertainty regarding firm valuation), and so it would be expected a positive relation between underpricing and the presence of women in leadership roles. Moreover, this argument can also be justified under the ex-ante uncertainty theory (Beatty & Ritter, 1986; Mok & Hui, 1998) if one believes that a greater female presence is a source of uncertainty about the firm's management and future performance. Nevertheless, due to the low proportion of women in leadership roles nowadays and the greater consciousness of investors about the importance of Environmental, Social and Governance (ESG) concerns, they can interpret female leaders as a positive signal and do not require a significant amount of underpricing to subscribe the issue (and so a negative relationship between underpricing and the presence of women in leadership roles would be expected). Ultimately, there may be no impact of a leader's gender on underpricing, meaning that there is no gender bias. As a result, given the conflicting directions, we hypothesise the following:

Hypothesis 1 (H1): The female representativeness in IPO firms' leadership has an impact on underpricing.

In our study, we disaggregate two different groups within the firm's leadership: the board

(Board of Directors or equivalent body, such as the Supervisory Board[6]) and the top management team (composed of C-suite executives and senior managers/top key employees). This distinction was considered given the differentiated functions that each group has inside of the company: the board, which has mainly the responsibility of overseeing and monitoring the company's activities and the appointment of the management group; and the top management team responsible for the day-to-day operations of the company (Mallin, 2013). Thus, in the possibility of existing any differences in the impact of female representativeness on the underpricing depending on the group, we will assess individually female representativeness at the board level and at the top management team level. Hence, we hypothesise the following two complementary hypothesis:

Hypothesis 1.1 (H1.1): The female representativeness in IPO firms' board has an impact on underpricing.

Hypothesis 1.2 (H1.2): The female representativeness in IPO firms' top management team has an impact on underpricing.

Furthermore, one of the innovations of our study is the fact that we will test if there is any connection between the gender impact on IPOs' valuation and the countries' culture. The origin of this intention comes from the fact that, as female representativeness in companies' leadership is distinct across countries, it is predictable that it might be related to a country's culture and may indirectly impact underpricing. As such, it will be assessed if the country's national culture proxied by Hofstede's (2001; 2010) six cultural dimensions can influence the impact of female representativeness on IPOs by moderating this effect. Therefore, the second question we aim to answer with this study is the following:

Research Question 2 (RQ2): To what extent the national culture can influence the potential impact of the female representativeness in IPO firms' leadership on underpricing.

To answer this question, we propose a hypothesis for each Hofstede's cultural dimensions about its moderating effect on IPO underpricing and, additionally, for each leadership group in analysis.

Since we do not draw any conclusion on the existence or direction (positive or negative) of the relation between underpricing and female representation in companies' leadership, we will, in accordance, not suggest any direction (attenuate or exacerbate) regarding the impact

[6] Depending on the corporate governance model of the company/country being one-tier or two-tier.

of each cultural dimension on this relation. Additionally, to the best of our knowledge, this is the first study to analyse this potential moderating effect. Therefore, we will base our reasoning on the definitions of each dimension and related previous research that approached these topics.

Firstly, in respect of the Power Distance dimension (PDI), it is characterised as measuring the "dependence relationships in a country" (Hofstede et al., 2010, p. 61) being that in societies with a higher score of the PDI, there is a considerable dependence between less powerful and more powerful members. Additionally, in this context, it is of utmost importance status (and its signs) and authority, leading to the general acceptance of inequalities and hierarchies (Hofstede et al., 2010). Contrarily, in low-PDI countries, the power is decentralized and, for example, within organisations, it is acceptable changes in roles, being valued the qualifications and the skill set of each person (Hofstede et al., 2010). As a result, we believe that this dimension might impact the relation presented in H1. In the potential existence of a positive relation between underpricing and female representativeness, we hypothesise that this relation may be exacerbated by this dimension meaning that in societies with a large Power Distance, the underpricing will be greater when the presence of women is also greater. This suggestion comes from the fact that, as mentioned by Carrasco et al. (2015), historically, women are less powerful than men and, in this context, investors may be unsure about their expertise to be company leaders and thus, ask for a greater risk premium in the form of the 1st-day return. Correspondingly, if our main relation showed to be negative (greater female presence leads to a lower underpricing), we propose that the moderating effect will weaken the relation for the same above-mentioned reasons.

Therefore, we formulate the following hypotheses for the two groups in analysis:

Hypothesis 2.1.1 (H2.1.1): A country's Power Distance Index score influences the relation between underpricing and female representativeness on IPO firms' board.

Hypothesis 2.1.2 (H2.1.2): A country's Power Distance Index score influences the relation between underpricing and female representativeness on IPO firms' top management team.

Regarding Individualism versus Collectivism, the conclusions we might extrapolate from its definition are somewhat contradictory. On the one hand, collectivist societies seem to be more prone to accept and respect minorities and underrepresented groups, such as women, to prioritise the group's welfare and not individual well-being (Hofstede et al., 2010). This

view underlies the possibility of a greater prejudice against female leaders in an individualist country, which might lead to a stronger positive relation between underpricing and the female presence or a weaker negative relation if it showed to be the sign of the interaction. On the other hand, in collectivist countries, there is also a sense of belonging and harmony that leads to the opinions being "predetermined by group membership" (Hofstede et al., 2010, p. 145). As a result, traditions and prejudice might be more easily perpetuated through generations in a collectivist society than in an individualist, which might increase the gender bias in the first. This might translate into an opposite conclusion[7], and, although the two effects might cancel each other, we still suggest that there is a moderating effect of the Individualism Index. Therefore, we formulate the following hypotheses:

Hypothesis 2.2.1 (H2.2.1): A country's Individualism Index score influences the relation between underpricing and female representativeness on IPO firms' board.

Hypothesis 2.2.2 (H2.2.2): A country's Individualism Index score influences the relation between underpricing and female representativeness on IPO firms' top management team.

Concerning the Masculinity versus Femininity dimension, due to its definition, it seems natural to expect that it will influence the impact of female representativeness on underpricing. As mentioned in the previous chapter, a country that scores higher in the Masculinity index (MAS) is considered to be more stereotyped in terms of gender, being that men are expected to be more "assertive, competitive and tough" in opposition to women that are supposed to be more concerned about others (Hofstede et al., 2010, p. 138). This distinction is also present in the way masculine countries see careers for men and women, being for men "compulsory" and for women "optional" (Hofstede et al., 2010, p. 185). On the contrary, in a feminine society, both women and men can have the same behaviours and their roles overlap (Hofstede et al., 2010). Hence, we hypothesise that in high-MAS countries, there is a greater gender bias favouring men in leadership positions. Moreover, through the lens of Eagly and Karau's role congruity theory (2002) we reach the same conclusion since we expect that a higher Masculinity Index score in a country might lead to greater prejudice against female leaders. As a result, we believe that the Masculinity score can exert a moderating effect on the relation between underpricing and women's representativeness, and that effect might strengthen in the case of a positive relation due to investors perceiving

[7] Carrasco et al. (2015) also suggest similar conflicting justifications for the impact of Individualism on female representativeness on the Board of Directors.

female leaders as less capable than men and, therefore, asking for a greater initial return. In accordance, if the main relation is negative, the higher Masculinity might weaken the impact of women in leadership roles on underpricing. The hypotheses are defined below:

Hypothesis 2.3.1 (H2.3.1): A country's Masculinity Index score influences the relation between underpricing and female representativeness on IPO firms' board.

Hypothesis 2.3.2 (H2.3.2): A country's Masculinity Index score influences the relation between underpricing and female representativeness on IPO firms' top management team.

The fourth dimension of Hofstede (2001) – Uncertainty Avoidance (UAI) – aims to measure how comfortable a society is in the presence of uncertainty and ambiguity. Consequently, a high-UAI culture feels more discomfort, and people feel anxious about uncertain situations. Hofstede et al. (2010) state that for this type of cultures "what is different is dangerous" (Hofstede et al., 2010, p. 203). Because of this, we might suppose that in the presence of women in leadership (which is a relatively new reality in most countries) investors will feel uncomfortable with the situation and probably ask for a discount to subscribe the issue, leading to a greater underpricing. Thus, we believe that this dimension might affect the relation in analysis and, in the presence of a positive relation between the variables, the higher the UAI score of the country, the stronger the positive relation. Similarly, if the relation showed to be negative, the higher Uncertainty Avoidance might weaken the potential (negative) impact of female presence on underpricing. For this dimension, the hypotheses are developed as follows:

Hypothesis 2.4.1 (H2.4.1): A country's Uncertainty Avoidance Index score influences the relation between underpricing and female representativeness on IPO firms' board.

Hypothesis 2.4.2 (H2.4.2): A country's Uncertainty Avoidance Index score influences the relation between underpricing and female representativeness on IPO firms' top management team.

As regards the Long Term Orientation (LTO) of a given culture, it is known that in a society with a lower score (short term oriented), traditions are more respected, and there is a greater concern with "social and status obligations" (Hofstede et al., 2010, p. 243). Contrarily, in a long term oriented society, the goal is to achieve the long term objectives, implying "sustained efforts toward slow results" (Hofstede et al., 2010, p. 243). Specifically, in terms of gender perceptions in low-LTO countries, humility is only associated with women, given that in high-LTO societies, it is associated with both genders (Hofstede et al.,

2010). Therefore, we believe that in a country with a higher LTO score, women will be more respected, which may lead to a weakening of the positive relation between female representation and underpricing or a strengthening if the relation proved to be negative. Thus, we formulate the following hypotheses:

Hypothesis 2.5.1 (H2.5.1): A country's Long Term Orientation Index score influences the relation between underpricing and female representativeness on IPO firms' board.

Hypothesis 2.5.2 (H2.5.2): A country's Long Term Orientation Index score influences the relation between underpricing and female representativeness on IPO firms' board.

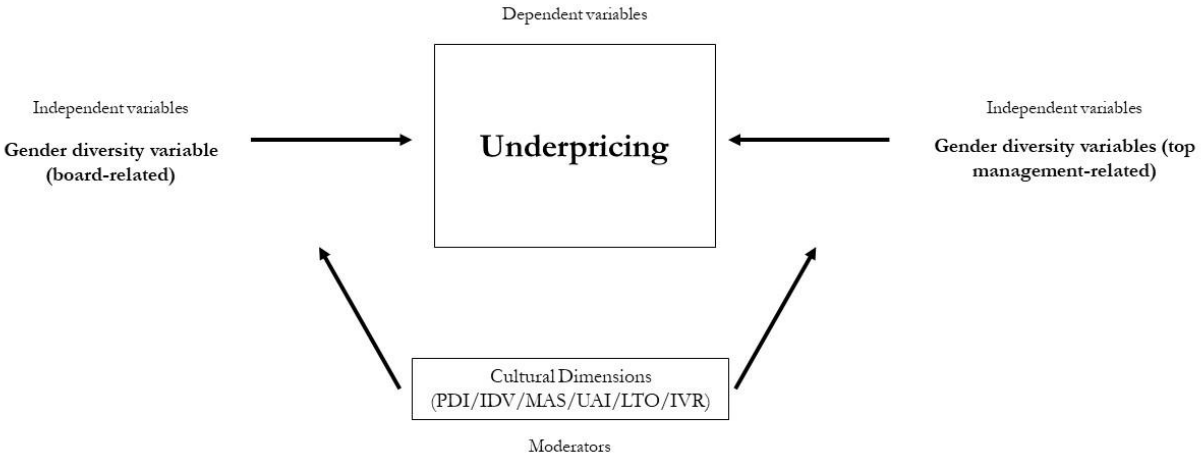
Finally, the last cultural dimension – Indulgence versus Restraint (IVR) – can be characterised by a "loose" versus "tight" society, in the sense that in an indulgent culture it is prioritised well-being relatively to following social norms (Hofstede et al., 2010, p. 291). In addition, in high-IVR countries, there is no unequal share of household responsibilities between partners, and gender roles are "loosely prescribed" (Hofstede et al., 2010, p. 297). Thus, it is expected that in the presence of a positive relation for H1, the higher IVR will be translated into a weakening of the relation since it is a society that seems not to perceive a woman in the role of a leader negatively. However, if the relation between the underpricing and female presence in the leadership is negative, the moderating effect is expected to be in the same direction, therefore, strengthening the relation. The last two hypotheses are the following:

Hypothesis 2.6.1 (H2.6.1): A country's Indulgence vs. Restraint Index score influences the relation between underpricing and the female representativeness on IPO firms' board.

Hypothesis 2.6.2 (H2.6.2): A country's Indulgence vs. Restraint Index score influences the relation between underpricing and the female representativeness on IPO firms' top management team.

Figure 1 summarises the above hypothesis and presents the conceptual model of our study

Figure 1: Conceptual model



4. Methodology and Data

4.1. Methodology

To answer the research questions mentioned in the previous chapter, univariate and multivariate analyses were performed in this study. In this subchapter it is presented the methodology applied in the multivariate analysis.

4.1.1. Impact of Female Leadership on IPOs' Underpricing

Previous similar studies have used Ordinary Least Square (OLS) regressions to find if female representativeness in firms' leadership helps explain the underpricing phenomenon (such as Mohan and Chen (2004) and Handa and Singh (2015)). As a result, it was followed the same approach, and we have created a similar base model to test the first hypothesis (H1):

$$\begin{aligned} Underpricing_i = \alpha &+ \beta_1 Female\ representation_i \\ &+ \beta_2\ Issue\ related\ control\ variables_i \\ &+ \beta_3\ Company\ related\ control\ variables_i \\ &+ \beta_4\ Governance\ related\ control\ variables_i + \varepsilon_i \end{aligned} \quad (1)$$

where i denotes each company and ε_i represents the stochastic error.

Regarding the variables used (a list with all the research variables and their descriptions can be found in Appendix A), the dependent variable of our study is the underpricing, and it was applied the common measure[8] of this 1st-day initial return – the raw return - computed as follows:

$$Raw\ return_i = \frac{First\ day\ closing\ price_i - Offer\ price_i}{Offer\ price_i} \quad (2)$$

The main independent variable, i.e., variable of interest, is the female representation in firms' leadership which, according to our hypothesis, can have different measures. Firstly, this variable can be related to the board or top management team, as presented, and explained in the previous chapter. Secondly, within which group of analysis, we used different measures to evaluate the presence of women in these two leadership groups in light of prior studies (Badru et al., 2019a; Rau et al., 2022). The various measures can be described as follows:

1) Female representation at the board level
    a. Dummy Board - DM_FEM_BOARD – with "1" assigned to firms with at

[8] This raw measure is extensively used in IPO's research (Arora & Singh, 2020; Handa & Singh, 2015; Reutzel & Belsito, 2015), although some authors also use a market-adjusted return (Handa & Singh, 2015; Mohan & Chen, 2004).

least 1 woman director on the Board of Directors or equivalent body and "0" otherwise;

b. Proportion Board - PFEM_BOARD – percentage of women on the Board of Directors or equivalent body.

2) Female representation at the top management team level
   a. Dummy Top - DM_FEM_TOP – with "1" assigned to firms with at least 1 woman executive on the top management team;
   b. Proportion Top - PFEM_TOP – percentage of women on the top management team;
   c. Dummy CEO - CEO_FEM - with "1" assigned to firms with a female CEO and "0" otherwise;
   d. Dummy CFO - CFO_FEM - with "1" assigned to firms with a female CFO and "0" otherwise.

A set of variables was also considered to control for other factors that influence underpricing to reduce the omitted variables bias. These variables can be divided into issue-related, company-related, and governance-related:

1) Issue-related control variables that were included in previous studies (Handa & Singh, 2015; Mohan & Chen, 2004):
   a) IPO size - GP_PTA - corresponds to the offering's gross proceeds in proportion of the firm's total assets (Pre-IPO)[9];
   b) Listing delay - LN(1+DELAY) - represented as the natural logarithm[10] of the number of days that goes from the offer date and the first trading day, and we considered it as a proxy for the "fluctuations in the relative level of informed demand" (Lee et al., 1996, p. 1196);
   c) Lagged Underpricing - LAG_UNDP - computed as the average underpricing of the other sample firms that issued in the previous 6 months, in accordance with Bradley and Jordan (2002).
2) Company-related control variables that follow the study of Handa and Singh (2015):
   a) Company age – LN(1+AGE) - corresponds to the natural logarithm[10] of the

[9] To represent the issue's size, we used this relative measure and not absolute (which has been applied in the literature) due to considering that using the gross proceeds value per se could not accurately reflect the size of an issue given the diverse group of companies we have in our sample.

[10] In order to reduce the huge variation of the variables AGE and TA, we followed the studies of Ljungqvist and Wilhelm (2003) and Badru et al. (2019a) and applied a natural logarithm to their values. We also applied the same reasoning to the variables DELAY, BOARD_SIZE and TOP_SIZE.

difference between the IPO year and the incorporation/foundation year of the company;

b) Firm size – LN(TA) – natural logarithm[10] of the book value of total assets (Pre-IPO) as a proxy for company size;

c) Industry risk - HIGH_TECH – dummy variable with "1" assigned to firms considered to be in an industry of high technology and "0" otherwise. We considered this variable to be a proxy of industry risk, as in the study of Reutzel and Belsito (2015). Regarding the classification of each company as in a high or low technology industry, we followed the 2-digit SIC codes classification proposed by Certo et al. (2001). As a result, it was considered high-tech industries the following industries: "computer hardware (SIC 35), computer software (SIC 73), semiconductors and printed circuits (SIC 36), biotechnology (SIC 28), telecommunications (SIC 48), pharmaceuticals (SIC 28), specialty chemicals (SIC 28), and aerospace (SIC 37)" (Certo et al., 2001, p. 651);

d) Ex-ante risk - STD19 – standard deviation of daily returns from the first 20 trading days (excluding the initial return), which is a measure of ex-post risk and we assumed to be a proxy of ex-ante risk (Mohan & Chen, 2004).

3) Governance-related control variables:

a) Board size[11] – LN(BOARD_SIZE) – natural logarithm[10] of the total number of directors on the BoD or equivalent body, as proposed by Hand and Singh (2015);

b) Top management team size[11] – LN(TOP_SIZE) – natural logarithm[10] of the total number of executives considered to be in the top management team, i.e., C-suite members, members of the Management Board/Committee (when applied), heads of departments and senior managers;

c) CEO duality – binary variable coded with 1 if the CEO and Chairperson of the BoD or equivalent body are the same, as proposed by Reutzel and Belsito (2015).

Consequently, our base model can be defined by the following extended equation:

[11] The board and top management size variables will be used one at a time depending on the variable of interest: if they are the DM_FEM_BOARD or PFEM_BOARD, the BOARD_SIZE is used; if they are the DM_FEM_TOP or PFEM_TOP, the TOP_SIZE is used; if they are the CEO_FEM or CFO_FEM, no size variable is used.

$$
\begin{aligned}
Underpricing_i = {} & \alpha + \beta_1 Female\ representation_i + \beta_2\ GP\_PTA_i \\
& + \beta_3 \ln (1 + DELAY)_i + \beta_4\ LAG\_UNDP_i + \beta_5 \ln (1 + AGE)_i \\
& + \beta_6 \ln (TA)_i + \beta_7\ HIGH\_TECH_i + \beta_8\ STD19_i \\
& + \beta_9 \ln (SIZE)_i + \beta_{10}\ CEO\_DUAL_i + \varepsilon_i
\end{aligned}
\tag{3}
$$

where i denotes each company and ε_i represents the stochastic error.

4.1.2. Moderating Effect of National Culture

Turning now to the second research question of our study (RQ2), we propose to test if the national culture of the IPO firm's country can influence the potential relation between female representation and underpricing. To answer this question, we used our base model and added, individually, each of the six Hofstede's (2010) cultural dimensions (CD) plus an interaction variable of the cultural dimension with the female representation variable. As a result, we perform a moderation analysis to see culture's impact in this relation.

The base model for this analysis is defined as follows:

$$
\begin{aligned}
Underpricing_i = {} & \alpha + \beta_1 Female\ representation_i + \beta_2\ GP\_PTA_i \\
& + \beta_3 \ln (1 + DELAY)_i + \beta_4\ LAG\_UNDP_i + \beta_5 \ln (1 + AGE)_i \\
& + \beta_6 \ln (TA)_i + \beta_7\ HIGH\_TECH_i + \beta_8\ STD19_i \\
& + \beta_9 \ln (SIZE)_i + \beta_{10}\ CEO\_DUAL_i + \beta_{11}\ CD_i \\
& + \beta_{12}\ (CD_i \times Female\ representation_i) + \varepsilon_i
\end{aligned}
\tag{4}
$$

where i denotes each company and ε_i represents the stochastic error.

Hence, the model's moderators are the six cultural dimensions proposed by Hofstede (2010), which are measured through an index ranging from 0 to 100:

4) Cultural dimensions[12]:
    a) Power distance index - PDI - power distance index score of each country, where a higher score means a larger Power Distance;
    b) Individualism index - IDV - individualism versus collectivism score of each country, where a higher score means a more individualist society;
    c) Masculinity index - MAS - masculinity score of each country, where a higher score means greater Masculinity;
    d) Uncertainty avoidance index - UAI - uncertainty avoidance index score of each country, where a higher score means greater Uncertainty Avoidance;

[12] The detailed definitions of each cultural dimensions are presented in the subchapter "2.4. Hofstede's National Culture Framework".

e) Long term orientation index – LTO - long term orientation versus short term orientation score of each country, where a higher score means a longer term oriented society;
f) Indulgence vs. restraint index – IVR - indulgence versus restraint score of each country, where a higher score means a more indulgent society.

Additionally, it is important to note that, although the scores for each country were collected in different years[13], it seems reasonable to assume that the scores are static over the years and up to date, given that the pace of change in a culture is very slow (Hofstede, 2022b).

4.2. Data

4.2.1. Sample and Data Collection

For this study, we used a sample of firms that became listed for the first time on European stock exchanges between 2000 and 2020. The choice of the period for data collection was due to its relevance in terms of female representativeness initiatives (in particular, the last decade[14]), as previously presented in the literature review. As for the geographical scope, the interest for the European landscape relates with the lack of research of this specific field in this geography (to the best of our knowledge, the study of Teti and Montefusco (2021) is the first to address an European country).

Data were predominantly retrieved from Capital IQ[15] as it aggregates a wide range of data about the deals and companies.

Additionally, given that the information available on the platform about board members and executives was insufficient, we collected the gender data from each company's IPO prospectus. It should be noted that some assumptions were made to consider each person's gender. Firstly, the gender-related variables were defined, as in prior research, considering the existence of only two possible categories: women and men. However, recent research shows that these practices are both "problematic" and "exclusionary" (Cameron & Stinson, 2019, p. 1). Given that we obtained the gender composition of the firms' leadership using the biographical information of each person present in the IPO prospectus (where, for all the companies in analysis, there was no indication of a different gender besides women/men), it was impossible to identify any different self-identification from the binary norm (non-

[13] The first scores were collected between 1967 and 1973 and this initial analysis comprehended 40 countries which was later extended to 50 countries and some regions. Nowadays, the scores are available for more than 70 countries and regions (Hofstede, 2022b).
[14] For a deeper analysis, it was separated the two decades present in the period.
[15] Available at: https://www.capitaliq.com/

binary and/or transgender persons)[16] and the default approach was assumed. Secondly, the gender was identified in the biographies of each director/executive by gendered pronouns (e.g., Mrs., Mrs., and Mr.) and titles (e.g., She/Her/Hers and He/Him/His). In some cases, it was not possible to use these criteria[17] thus, more fallible criteria were applied such as identifying a specific first name in each language as female or male or searching in LinkedIn more information or a photography to classify someone's gender (exclusively considering the gender expression). Finally, given the above and that it does not represent a meaningful difference for our conclusions, we used interchangeably the gender and sex terms – woman/female and man/male (although acknowledging the theoretical differences between the terms).

The cultural dimensions were retrieved from Hofstede's website[18] that contains the most updated data for each country.

Our final sample results from of a series of "cleanings" to the original sample retrieved from Capital IQ. Some of the main exclusions are the following:

(i) In addition to the criterion of being IPOs listed in Europe, we considered only IPOs of companies whose incorporation countries are also in Europe in order to increase the chances of accurately presuming the investors' nationality, which is important for the culture hypotheses (also assuming the existence of home bias (Strong & Xu, 2003));

(ii) IPOs with an offer price lower than €5, assumed to be penny stocks, were removed from the study[19];

(iii) Since we are interested in studying the cultural effect, it was important to exclude countries whose number of IPOs was less than 30, which we considered not sufficiently significant;

(iv) Our sample comprises only non-financial firms due to the specificity of financial-related businesses (for the same reason, we have excluded a football club). The criterion to eliminate financial companies was based on the SIC codes and we eliminated the industries included in "Division H: Finance, Insurance, And Real

[16] In the presence of more information, there was complete availability to adapt the study to be more inclusive and respectful.
[17] For example, finish is a genderless language thus this strategy could not be applied.
[18] Available at: https://www.hofstede-insights.com/product/compare-countries/
[19] Bradly et al. (2006) found that these penny stocks IPOs differ from ordinary IPOs, particularly in terms of underpricing (higher than traditional IPOs).

Estate"[20];

(v) It was considered a threshold of €50 000 for the transaction value therefore, all IPOs below this value were excluded;

(vi) We have retrieved the IPOs prospectus from various sources since there is no unique platform where we can find them for Europe as a whole or for most of the countries. Many prospectuses were not found thus, the companies were excluded from our sample;

(vii) In general, missing values for the variables in analysis led to the exclusion of the IPO.

A summary of the sample selection process is present in Table 1.

Table 1: Sample selection criteria

	Selected search criteria	**Description**	**Number of IPOs matches**
1.	IPOs issued on European Exchanges between 01/01/2000 and 31/12/2020	Exclusion of deals not closed; Exclusion of SPAC's IPOs	**4 030**
2.	Exclusion related to incorporation country and offer price	IPOs of firms outside Europe were excluded and with offer prices lower than €5	**2 235**
3.	Exclusion related to culture data	Firms' countries from which there is no available data for the cultural dimensions' scores were excluded	**2 144**
4.	Exclusion based on the number of IPOs per country	IPOs from countries whose representation in the total sample is less than 30 IPOs were excluded	**1 160**
5.	Exclusion of financial firms	Based on the SIC codes, companies that belong to the division "Finance, Insurance, And Real Estate" were removed	**956**
6.	Exclusion based on transaction value	IPOs with a transaction value equal to or less than €50 000 were excluded	**751**
7.	Exclusion related to the unavailability of people data	Firms from which there were no IPO prospectus available were excluded	**345**
8.	Exclusion of non-initial public offering data	Global depositary receipts were excluded	**343**
9.	Exclusion of "unique" companies	Football club was excluded	**342**

4.2.2. Univariate Analyses

Before proceeding to the presentation of the multivariate analyses' results, which answer our research questions, we will present our sample's descriptive statistics and some univariate analyses.

Firstly, we present in Tables 2 (numerical variables) and 3 (categorial variables) the descriptive statistics of the variables in our models. As can be seen from the first table, the mean first-day return (UNDP) is around 33% representing more than double the value first reported by Ibbotson (1975) using a sample of IPOs from the 1960s, 11.4%. Even when

[20] The division structure is available at: https://www.osha.gov/data/sic-manual

comparing with the average value for the most recent period analysed by Loughran and Ritter (2004) – between 2001 and 2003 – our sample shows a larger underpricing (the authors reached a 12% initial return). However, our average value differs little from the one reported by Mohan and Chen (2004) (37%) and it is slightly higher than the 20.8% reported by Handa and Singh (2015). Notwithstanding, it is important to highlight the very high standard deviation of the variable (nearly 248%) reflected in the wide range of values for this initial return.

Table 2: Descriptive statistics - numerical variables

This table presents the descriptive statistics of the numerical research variables. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Some variables have fewer observations due to a lack of information. Information related to IPOs and firms is from Capital IQ, the cultural dimensions scores are from Hofstede's website, and people's information is from the company's prospectus.

Variable	Mean	Min	Median	Max	Std. Dev.	N
UNDP	0.325	-0.990	0.025	33.463	2.476	342
PFEM_BOARD	0.152	0.000	0.143	0.625	0.151	342
PFEM_TOP	0.107	0.000	0.000	0.714	0.151	340
PDI	44.833	18.000	38.000	68.000	15.223	342
IDV	69.439	51.000	71.000	89.000	8.139	342
MAS	42.673	5.000	43.000	70.000	23.814	342
UAI	64.278	23.000	65.000	94.000	22.068	342
LTO	60.398	35.000	61.000	83.000	15.688	342
IVR	51.547	29.000	48.000	78.000	15.803	342
GP	469.893	38.700	220.460	4 545.430	646.398	342
GP_PTA	2.358	0.017	0.546	268.904	14.980	342
DELAY	1.848	0.000	1.000	43.000	3.787	342
LN(1+DELAY)	*0.775*	*0.000*	*0.693*	*3.784*	*0.618*	*342*
LAG_UNDP	0.309	-0.468	0.060	33.463	1.854	334
AGE	40.222	0.000	20.000	440.000	50.742	342
LN(1+AGE)	*3.051*	*0.000*	*3.045*	*6.089*	*1.241*	*342*
TA	2 468.085	0.744	415.700	151 459.000	9 823.004	342
LN(TA)	*5.964*	*-0.296*	*6.030*	*11.928*	*1.968*	*342*
STD19	0.020	0.003	0.017	0.125	0.012	342
BOARD_SIZE	7.854	3.000	7.000	21.000	3.417	342
LN(BOARD_SIZE)	*1.975*	*1.099*	*1.946*	*3.045*	*0.416*	*342*
TOP_SIZE	6.288	1.000	6.000	22.000	3.469	340
LN(TOP_SIZE)	*1.677*	*0.000*	*1.792*	*3.091*	*0.598*	*340*

Regarding our variables of interest, we reached similar results in terms of the percentage of women on the boards and on the top management team – an average value of approximately 15% and 11%, respectively. The values are clearly below the expected gender equality goal of 50%. Although, by analysing the dummy variables representing the existence of at least one woman in each group, it is possible to see more positive results, with more than half of the companies in our sample having at least one female director on the board.

This value suggests that policymakers' efforts to mandate gender quotas are bringing results, although at a slow pace. The differences between the board and the top management team might be due to those same policies that, at least for now, are only targeted at boards therefore, the companies do not have many incentives to create more gender-diverse management teams. The number of female CEOs and CFOs further enhances this underrepresentation of women in the top management team, being only 5 in the CEO position (less than 1.5%) and almost 13% as CFOs. For this reason, the CEO_FEM variable is, from now on, excluded from our analysis and will not be subject to multivariate analysis.

Table 3: Descriptive statistics - categorical variables

This table presents the descriptive statistics of the categorical research variables. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Information related to IPOs is from Capital IQ and people's information is from the company's prospectus.

Variable		Frequency	Percent (%)
DM_FEM_BOARD	≥ 1 woman	214	62.57
	No women	128	37.43
DM_FEM_TOP	≥ 1 woman	147	43.24
	No women	193	56.76
CEO_FEM	Female	5	1.47
	Male	335	98.53
CFO_FEM	Female	42	12.54
	Male	293	87.46
CEO_DUAL	Yes	43	12.65
	No	297	87.35
HIGH_TECH	Yes	151	44.15
	No	191	55.85

In terms of both IPO and company sizes, our sample comprehends a wide range of values. For example, the gross proceeds range from nearly 2.4x to 269x the firm's total assets and the smallest company has €0.74 million in total assets and the largest €151 billion. Additionally, on average, the firms in our sample, took 40 years to become public and the number of days between the offer date and the first trading day averaged nearly 2 days.

Furthermore, after conducting an outlier's analysis via boxplots, we also decided to winsorized most of the variables (other than dummies or logarithmic) at the 1st and 99th percentiles to reduce the impact of extreme values[21].

Moving on to a detailed analysis of the IPOs' characteristics[22], in Table 4 is possible to see a disaggregation by offer year. The data shows that the number of IPOs accomplished

[21] As a result, in the univariate and multivariate analyses' tests, the variables used are the winsorized (in particular, the UNDP, PFEM_TOP, GP_PTA, LAG_UNDP and STD19).

[22] Additional underpricing analyses can be found in Appendix B.

varies from year to year and that in the pre-crisis period (2005-2007) and recent years (from 2014 onwards), the IPO volume was higher. During the years under review, a clear trend in terms of initial return is not possible to detect, with values ranging from negative to very positive[23]. However, when also analysing the aggregate gross proceeds, there might be an underlying relation between its values and the mean first-day return, being the largest gross proceeds in the years with a greater mean underpricing (2007 and 2015).

Table 4: Number of IPOs, mean and median first-day return and aggregate gross proceeds by year, 2000 to 2020

This table presents additional descriptive statistics of the sample with disaggregation by year. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The first-day return of each IPO is the variable underpricing (UNDP) computed as the percentage change in the first trading day closing price from the offer price. The aggregate gross proceeds of each year are the sum of the gross proceeds of all IPOs of a given period. Information related to IPOs is from Capital IQ.

Year	Number of IPOs	Mean first-day return	Median first-day return	Aggregate gross proceeds, € millions
2000	5	-14.3%	-2.8%	3 848.970
2001	2	1672.6%	1672.6%	491.620
2002	1	-5.4%	-5.4%	296.430
2004	1	0.0%	0.0%	493.640
2005	23	6.1%	0.3%	11 482.360
2006	42	44.5%	3.4%	14 082.650
2007	39	55.5%	3.4%	17 780.350
2008	4	0.6%	1.6%	3 367.780
2009	4	12.8%	7.0%	2 414.570
2010	12	-0.4%	3.9%	5 668.200
2011	9	1.0%	-0.2%	2 448.430
2012	5	58.0%	14.9%	2 455.680
2013	9	7.3%	2.3%	4 248.190
2014	25	6.3%	0.4%	10 884.110
2015	47	52.3%	0.3%	23 229.470
2016	19	3.9%	0.7%	11 715.440
2017	37	1.6%	3.2%	14 574.970
2018	24	4.0%	2.3%	12 862.740
2019	10	4.1%	0.0%	8 975.420
2020	24	15.1%	12.1%	9 382.230
Total	342	32%	3%	160 703.250

As our study mainly focuses on the female representation in firms' leadership and its possible impact on IPOs' valuation, it is important to examine in more detail these variables. Firstly, in-depth analyses of the distribution of women at the board level and at the top management team level are presented in Tables 5 and 6, respectively. These tables show, once more, the lower representation of women in both groups. Female directors occupy only 15.7% of board seats which, although being a small value, it is higher than the one reported by Handa and Singh (2015) using an Indian IPOs sample that comprehends nearly the first

[23] The low representation of some years in our sample requires extra caution in interpreting this information.

decade of our sample (4.8%)[24]. The maximum number of women in these positions is 7, which contrasts with the values for men, mainly the average number of each gender (a detailed analysis of the distribution of women on the boards can be found in Appendix C). As for the top management team, the conclusions are somewhat similar, with women being underrepresented, with a percentage of 12.5% while being more prevalent the existence of no women in the top management teams as mentioned above in the descriptive statistics analysis. Additionally, for both groups, data show that although there are boards and top management teams without a woman, there are none without a man (a detailed analysis of the distribution of women on the top management teams can be found in Appendix C).

Table 5: Gender information about board members

This table presents information about gender disaggregation on the samples' boards. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). Number of positions reflects the number of board seats occupied by each gender. The minimum, maximum and mean number of members of each gender in a board are also presented. Information related to IPOs is from Capital IQ and people's information is from the company's prospectus.

Board Members	No. of positions	Min	Max	Mean
Females	423	0	7	1.24
Males	2263	2	19	6.62
Total board size	2686	3	21	7.85

Table 6: Gender information about top management team members

This table presents information about gender disaggregation on the samples' top management team (or top, in short). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). Number of positions reflects the number of top management team functions occupied by each gender. The minimum, maximum, and mean number of members of each gender in a top management team are also presented. Information related to IPOs is from Capital IQ and people's information is from the company's prospectus.

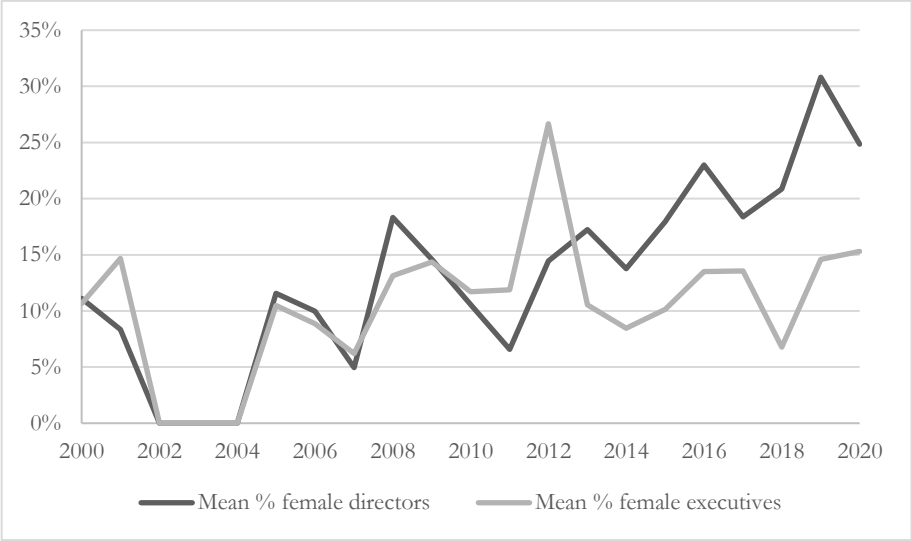
Top Members	No. of positions	Min	Max	Mean
Females	268	0	6	0.79
Males	1870	1	22	5.50
Total top size	2138	1	22	6.29

Although, in aggregate form, the presence of women seems far from the desired levels, if we look at the historical evolution of the percentage of women in the two leadership groups in analysis it is possible to see a trend, particularly at the board level. As shown in Figure 2, in recent years (from 2011 onwards), IPO firms have had a larger percentage of women directors. Concerning the top management team, it is not clear any trend however, if any, it will be of a stable value (excluding the peaks in some years).

[24] Using a recent sample of Malaysian IPOs, Badru et al. (2019a) presented an 8.77% female representation on the boards.

Figure 2: Historical evolution of female representation in leadership

This figure presents the mean values of the proportion of women on the boards and on the top management teams by offer year. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). Information related to IPOsis from Capital IQ and people's information is from the company's prospectus.



When conducting a cross-country analysis of underpricing, female representation and the six cultural dimensions, some conflicting conclusions can be made. As shown in Table 7, the country with the highest percentage of women on the board and the second highest in top management, is Norway which presents the highest mean and median first-day returns. However, a possible link between these variables cannot be suggested since when observing other countries with higher female representativeness, we do not find the same trend neither in mean values nor median (for example, Sweden and Finland). Moreover, in terms of cultural dimensions, as expected, the data suggests a clear link between the Masculinity Index and the female presence in leadership. Countries with a lower MAS, i.e., more feminine, exhibit a higher percentage of women in leadership roles.

Table 7: Underpricing, gender representation and Hofstede's cultural dimensions scores by country

This table presents a disaggregation by country of some relevant variables such as the mean and median underpricing (or first-day return), mean values for the percentage of women on the board and on the top management team, and the country-scores for the six Hofstede's cultural dimensions. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). Regarding the values for the top management team variable, the sample size is different due to lack of information (Italy has 34 observations and Norway 11). Information related to IPOs and firms is from Capital IQ, the cultural dimensions scores are from Hofstede's website and people's information is from the company's prospectus.

Country	Sample size	Mean first-day return	Median first-day return	Mean % women on the board	Mean % of women on the top management team	PDI	IDV	MAS	UAI	LTO	IVR
Belgium	15	59.8%	2.1%	9.9%	8.1%	65	75	54	94	82	57

Country	Sample size	Mean first-day return	Median first-day return	Mean % women on the board	Mean % of women on the top management team	PDI	IDV	MAS	UAI	LTO	IVR
Denmark	15	11.4%	9.8%	19.2%	7.8%	18	74	16	23	35	70
Finland	13	-1.2%	2.9%	25.9%	21.5%	33	63	26	59	38	57
France	47	72.9%	1.1%	14.6%	11.5%	68	71	43	86	63	48
Germany	67	54.5%	3.4%	12.4%	3.6%	35	67	66	65	83	40
Italy	35	25.5%	0.6%	15.2%	8.3%	50	76	70	75	61	30
Luxembourg	10	6.5%	-1.2%	8.7%	1.3%	40	60	50	70	64	56
Netherlands	25	7.5%	3.7%	8.2%	7.8%	38	80	14	53	67	68
Norway	12	94.8%	16.9%	37.6%	20.9%	31	69	8	50	35	55
Poland	19	6.5%	0.0%	13.8%	11.7%	68	60	64	93	38	29
Spain	27	34.2%	3.4%	8.3%	9.8%	57	51	42	86	48	44
Sweden	45	-7.7%	0.6%	23.0%	20.9%	31	71	5	29	53	78
United Kingdom	12	-0.5%	-1.1%	10.2%	15.0%	35	89	66	35	51	69

Tables 8 and 9 present additional analyses focusing on the gender differences for underpricing and other IPO, firm and governance characteristics (more analyses can be found in Appendix D). We have conducted equality tests for both means and medians (t-test and Wilcoxon non-parametric test, respectively) using the dummy variables that are assigned with "1" when there is at least one woman on the board or top management team[25]. For both leadership groups, the mean and median underpricing values are greater for gender-diverse boards and top management team however, the differences are not statistically significant. This univariate analysis suggests little evidence of a possible impact of gender diversity on the IPOs' valuation.

Regarding the analysis of the boards, the differences in the proportion of gross proceeds on total assets are statistically significant (for both tests), with larger IPOs (a higher value for the ratio) being the ones with more gender-diverse boards. It was also observed that companies with women tend to be older and larger (in terms of total assets). Additionally, this analysis shows that gender-diverse boards are greater in size than all-male boards.

Table 8: Sample comparison based on gender - Board

This table presents equality tests for both means and medians, with the subgroups being "boards with at least one woman" and "boards with no women" (using the variable DM_FEM_BOARD). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). In the second and third columns, are each variable's means and medians (in parathesis). In the fourth and fifth columns, there are the t-test and the Wilcoxon non-parametric test statistics, respectively. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Variable	≥ 1 woman	No women	t-value	Wilcoxon Z
UNDP	0.056	0.031	-1.309	1.116
	(0.0301)	(0.021)		
GP_TA	0.994	1.459	2.939***	3.188***

[25] The same analysis was undertaken by dividing the sample as "having a female CFO" and "having a male CFO" and the results are in Appendix D.

Variable	≥ 1 woman	No women	t-value	Wilcoxon Z
	(0.484)	(0.718)		
LN(1+DELAY)	0.740	0.834	1.358	1.286
	(0.693)	(0.693)		
LAG_UNDP	0.204	0.201	-0.095	0.436
	(0.054)	(0.061)		
LN(1+AGE)	3.215	2.778	-3.194***	3.121***
	(3.258)	(2.773)		
LN(TA)	6.176	5.609	-2.598***	2.226**
	(6.231)	(5.523)		
HIGH_TECH	0.421	0.477	1.008	0.866
	(0.000)	(0.000)		
STD19	0.019	0.019	0.662	0.941
	(0.016)	(0.018)		
LN(BOARD_SIZE)	2.066	1.822	-5.477***	4.844***
	(2.079)	(1.792)		
CEO_DUAL	0.113	0.150	0.990	0.569
	(0.000)	(0.000)		

In terms of gender differences on the top management team, a different set of variables showed to be statistically different between the groups and, in the majority of them, for both mean and median. In terms of IPO characteristics, data showed that companies with a lower listing delay are the companies with a female presence. The high-tech dummy showed a significance of 10% for the equality means test. Additionally, companies with a higher ex-ante risk (STD19 variable) showed to be the ones with at least a woman on the top management. Similarly to the board's results, the size of the body seems to favour gender diversity, as the values are greater when there is gender diversity. The duality between the CEO and Chairperson roles was also proved to be more likely in companies with female representativeness.

Table 9: Sample comparison based on gender - Top management team

This table presents equality tests for both means and medians, with the subgroups being "top management teams with at least one woman" and "top management teams with no women" (using the variable DM_FEM_TOP). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). In the second and third columns, are each variable's means and medians (in parathesis). In the fourth and fifth columns, there are the t-test and the Wilcoxon non-parametric test statistics, respectively. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Variable	≥ 1 woman	No women	t-value	Wilcoxon Z
UNDP	0.061	0.034	-1.488	1.335
	(0.036)	(0.018)		
GP_TA	1.198	1.154	-0.280	0.368
	(0.549)	(0.550)		
LN(1+DELAY)	0.689	0.841	2.259**	2.844***
	(0.693)	(0.693)		
LAG_UNDP	0.189	0.215	0.735	0.768
	(0.048)	(0.063)		
LN(1+AGE)	2.979	3.117	1.019	0.839
	(3.091)	(3.045)		
LN(TA)	5.826	6.071	1.133	1.196

Variable	≥ 1 woman	No women	t-value	Wilcoxon Z
	(5.870)	(6.163)		
HIGH_TECH	0.388	0.482	1.734*	1.486
	(0.000)	(0.000)		
STD19	0.020	0.018	-2.003**	2.095**
	(0.018)	(0.016)		
LN(TOP_SIZE)	2.006	1.426	-10.076***	9.345***
	(2.079)	(1.386)		
CEO_DUAL	0.190	0.078	-3.134***	1.781*
	(0.000)	(0.000)		

In Appendix E, it can be found the Pearson correlation matrix of all research variables.

5. Results and Discussion

This section presents the main findings of our study and the answers to the research questions defined previously.

As mentioned in the methodology, we have conducted a multiple regression analysis using the OLS approach. As a result, some basic assumptions needed to be tested to ensure the correct running of our models: normality, homoscedasticity, and no perfect multicollinearity. First, the normality assumption can be overlooked since the Central Limit Theorem (CLT) theorises that, within a large sample, we have approximately a normal distribution (Asteriou & Hall, 2021). The heteroscedasticity was tested for all research models using the White test, and when it proved to exist, White's heteroscedasticity-consistent standard errors were used. Finally, to check for perfect multicollinearity, the correlation coefficients and the variance inflation factors (VIFs) of the explanatory variables (values available in Appendix E) were analysed. Although for some variables, the correlation matrix presents a statistically significant correlation, all the coefficients of variables jointly used in the models are below 0.9, it does not seem to exist any problem with collinearity (Asteriou & Hall, 2021). Additionally, all VIF's values (with the exception of the variables used for the interaction of culture and the variables of interest) are below 10, which is the common reference value for possible collinearity (Asteriou & Hall, 2021).

The present section is divided into two subchapters addressing the two research questions.

5.1. Impact of Female Leadership on IPOs' Underpricing

In the first research question, we defined two hypotheses aiming to find if there is a relation between female representativeness and underpricing: one addressing female presence at the board level and the other at the top management level. For each of the groups we used different measures for the variable of interest, as explained in the chapter "3. Research Questions and Hypothesis".

5.1.1. Board Level

The study uses two different variables to measure the female representation at the board level: DM_FEM_BOARD and PFEM_BOARD, which correspond to a dummy assigned with "1" if there is at least one woman on the board and the proportion of women on the board, respectively. Three regressions were run for each of the variables: the first with only the variable of interest and the governance-related control variables; the second adds to the previous the IPO-related variables; and the last regression (base model) includes all control

variables.

The results of these regressions are presented in Table 10. Our variables of interest (DM_FEM_BOARD and PFEM_BOARD) present a positive sign and are statistically significant at the 10% level. In general, these results give weak support (only in one of the models the variable is significant at the 5% level) to hypothesis H1.1. – underpricing is related to female representation at the board level. In particular, we found that gender diversity on IPO firms' boards and the proportion of female directors positively impact the level of underpricing, meaning that the greater the female representation, the higher the first-day return.

These results corroborate the findings of Reutzel and Belsito (2015) and Rau et al. (2022) which also found a positive relation between the variables[26] (given that the magnitude of our estimations is substantially different from the first and more similar to the latter). A possible explanation[27] for these results can be based on the role congruity theory (Eagly & Karau, 2002) and on the persistence of prejudice towards women in leadership positions. Therefore, investors considering investing in the IPO will negatively perceive either a gender-diverse board (at least one woman) or a greater proportion of women directors, thus demanding a more significant discount in the form of the first-day initial return to subscribe the issue. Similarly, these findings can be explained through the lens of the ex-ante uncertainty theory (Beatty & Ritter, 1986; Mok & Hui, 1998). As gender inequality in leadership roles has been the reality, a greater representation of women directors might be interpreted as a source of uncertainty about firm's value, hence implying a larger discount in the offer price for this uncertain factor.

Table 10: Multivariate regression analysis of RQ1 - Board level

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variables are either DM_FEM_BOARD or PFEM_BOARD. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

	(1)	(2)	(3)	(1)	(2)	(3)
α	0.097**	0.048	-0.093	0.087*	0.035	-0.102

[26] Reutzel and Belsito (2015) used instead the number of female directors to measure female representation.

[27] An alternative explanation might be related with the offer price definition since companies and investment banks may fail to incorporate this aspect of gender diversity on the valuation. Consequently, if we expect that investors (in recent years, more concerned about this issue) see the female presence as a source of value, in the first trading day, the increased demand for more gender-diverse companies will lead to a greater underpricing. This justification goes in line with the one proposed by Rau et al. (2022).

	(1)	(2)	(3)	(1)	(2)	(3)
	[2.177]	(0.975)	(-1.422)	[1.961]	(0.699)	(-1.561)
DM_FEM_BOARD	0.032	0.037*	0.037*			
	[1.605]	(1.819)	(1.857)			
PFEM_BOARD				0.119*	0.132**	0.111*
				[1.951]	(2.101)	(1.786)
LN(BOARD_SIZE)	-0.037	-0.022	-0.032	-0.031	-0.014	-0.024
	[-1.582]	(-0.969)	(-1.173)	[-1.391]	(-0.651)	(-0.932)
CEO_DUAL	0.012	0.017	0.007	0.011	0.016	0.006
	[0.426]	(0.526)	(0.272)	[0.409]	(0.493)	(0.204)
GP_PTA		0.008	0.012		0.008	0.012
		(0.988)	(1.236)		(1.091)	(1.121)
LN(1+DELAY)		0.018	0.014		0.018	0.014
		(1.154)	(0.955)		(1.158)	(0.906)
LAG_UNDP		-0.043*	-0.042*		-0.041*	-0.041*
		(1-837)	(-1.468)		(-1.761)	(-1.723)
LN(1+AGE)			0.003			0.003
			(0.397)			(0.415)
LN(TA)			0.011			0.011
			(1.452)			(1.321)
HIGH_TECH			-0.015			-0.014
			(-0.827)			(-0.737)
STD19			4.800***			4.702***
			(4.713)			(3.904)
R^2 (Adjusted R^2) %	1.164	2.823	9.841	1.521	3.148	9.812
	(0.281)	(1.029)	(7.032)	(0.0642)	(1.360)	(7.003)
F-statistic	1.319	1.981*	3.048***	1.730	2.175**	2.980***
N	340	332	332	340	332	332

In terms of control variables[28], surprisingly we found a negative relation between the lagged underpricing and our dependent variable with a 90% confidence level which contradicts the strong evidence of Bradley and Jordan (2002). In fact, in light of the hot issue market proposed by previous research, it was predicted that a higher underpricing average of the last 6 moth IPOs will mean a higher underpricing (Ibbotson & Jaffe, 1975; Ritter, 1984). In addition, our results show a positive and highly significant relation between underpricing and our measure for ex-ante risk, STD19. The sign and magnitudes obtained for this variable are largely consistent with those presented by Mohan and Chen (2004), meaning that a higher ex-ante risk leads to higher underpricing. These results are in accordance with the ex-ante uncertainty theory proposed by many researchers (e.g. Beatty and Ritter (1986); Mok and Hui (1998)).

5.1.2. Top Management Team Level

In what concerns the other leadership group in analysis, it was used the equivalent variables applied in the board analysis (DM_FEM_TOP and PFEM_TOP) and a third binary variable that reflects the gender of the CFO. The regressions used followed the same

[28] Similar results for these control variables were obtained in the remaining models of these study (with some slight changes in the significance levels for the LAG_UNDP variable).

structure as explained in the previous subchapter.

Table 11 presents the results of hypothesis H1.2 testing. As can be seen, for these management functions, little evidence was found[29] to prove that there is a positive relation between underpricing and female representativeness. These results might suggest that there are indeed differences in the perception of women depending on their roles given that, in the board results, we obtained stronger evidence for this positive relation. A possible explanation for this phenomenon might be the considerably lower representation of women in management functions (not only in our sample but in general), which may translate into insufficient representation to impact investors' decisions.

Table 11: Multivariate regression analysis of RQ1 - Top management team level

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variables are either DM_FEM_TOP or PFEM_TOP or CFO_FEM. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
α	0.047*	0.020	-0.114*	0.041	0.017	-0.126*	0.047***	0.034*	-0.091
	[1.691]	(0.707)	(-1.658)	[1.512]	(0.599)	(-1.810)	[4.562]	(1.904)	(-1.362)
DM_FEM_TOP	0.033	0.022	0.019						
	[1.551]	(0.951)	(0.842)						
PFEM_TOP				0.138**	0.100	0.105			
				[1.995]	(1.337)	(1.385)			
CFO_FEM							-0.002	-0.023	-0.030
							[-0.084]	(-0.800)	(-1.013)
LN(TOP_SIZE)	-0.009	0.000	-0.010	-0.006	0.002	-0.010			
	[-0.520]	(0.007	(-0.569)	[-0.354]	(0.113)	(-0.642)			
CEO_DUAL	-0.003	0.006	-0.002	-0.001	0.007	-0.002	-0.010	-0.003	-0.011
	[-0.114]	(0.170)	(-0.058)	[-0.023]	(0.216)	(-0.051)	[-0.369]	(-0.098)	(-0.377)
GP_PTA		0.008	0.010		0.007	0.011		0.008	0.008
		(1.034)	(0.946)		(1.010)	(1.027)		(1.045)	-0.666
LN(1+DELAY)		0.019	0.014		0.019	0.014		0.016	0.012
		(1.195)	(0.887)		(1.196)	(0.916)		(1.014)	-0.776
LAG_UNDP		-0.046**	-0.046**		-0.046**	-0.045**		-0.040*	-0.042*
		(-2.042)	(-2.019)		(-2.041)	(-2.005)		(-1.842)	(-1.852)
LN(1+AGE)			0.005			0.005			0.001
			(0.625)			(0.676)			-0.185
LN(TA)			0.009			0.010			0.007
			(1.223)			(1.375)			-0.920
HIGH_TECH			-0.015			-0.014			-0.012
			(-0.800)			(-0.764)			(-0.661)
STD19			4.877***			4.889***			4.939***
			(4.007)			(4.002)			(3.991)
R^2 (Adjusted R^2) %	0.735	2.175	8.984	1.194	2.463	9.385	0.043	1.700	8.837
	(-0.152)	(0.369)	(6.149)	(0.312)	(0.662)	(6.562)	(-0.559)	(0.169)	(6.249)
F-statistic	0.829	1.710	2.581***	1.354	1.791	2.699***	0.072	1.512	2.761***

[29] Only one of the models showed a statistically significant (p-value ≤ 5%) positive relation between the proportion of women on the top management team and underpricing.

	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
N	340	332	332	340	332	332	335	327	327

5.1.3. Impact of Female Leadership on IPO's Underpricing Across Time

In line with the study of Rau et al. (2022), and given the trend observed in the univariate analysis, we have tested if there is any difference in the impact of female leadership on underpricing across decades. As a result, we have re-estimated our base models for each variable of interest, splitting the sample in two: 2000-2009 and 2010-2020.

As shown in Table 12, all the female representation impact on underpricing is driven by IPOs that occurred between 2010 and 2020. This is true for the board-related variables, which were the only ones that proved to be statistically significant in the previous analyses. Similar results were obtained by Rau et al. (2022). This discrepancy could be attributable to the increased female representativeness in recent years, intensifying the effect. Prior to 2010, the level of female directors could have been insufficient to create an impact in IPOs' valuation.

Moreover, between the control variables, it is also possible to denote significant differences across decades. Firstly, within the first decade, it is prevalent (only the CFO model does not present significance) the positive relation between the gross proceeds in proportion of total assets (GP_PTA) and the underpricing (at the 10% significance level), which goes in line with the findings of Kaur and Singh (2015) and Reutzel and Belsito (2015)[30]. The lagged underpricing is only statistically significant (at the 10% level) within the second decade and in the top management team models. This variable presents the same magnitude and sign as in the previous analyses. From 2010 to 2020, the variable logarithm of the board size carries a negative sign and is statistically significant at 10% level for the board-related models. Its sign is consistent with the study of Teti and Montefusco (2021), although the magnitude is different. In the models using DM_FEM_BOARD and PFEM_BOARD, the company size is positively related to underpricing in the first decade (significance level of 10%). Badru et al. (2019a) also found a significant positive relation with a similar magnitude. Finally, the strong evidence of positive relation between the standard deviation of the first 19 days (STD19) was driven by IPOs from the second decade.

[30] However, these authors analysed the absolute value of gross proceeds.

Table 12: Multivariate regression analysis of RQ1 - Effect across decades

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variables can vary as presented and, consequently, the LN(SIZE) can be either LN (BOARD_SIZE) or LN(TOP_SIZE). Th 1st and 2nd decades correspond to the period 2000-2009 and 2010-2020, respectively. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Decade	**1st**	**2nd**	**1st**	**2nd**	**1st**	**2nd**	**1st**	**2nd**	**1st**	**2nd**
α	-0.186	-0.058	-0.188	-0.076	-0.196*	-0.068	-0.194	-0.093	-0.134	-0.084
	(-1.652)	(-0.716)	(-1.583)	(-0.907)	(-1.773)	(-0.850)	(-1.575)	(-1.091)	(-1.163)	(-0.983)
DM_FEM_BOARD	0.034	0.056**								
	(0.904)	(2.136)								
DM_FEM_TOP			0.042	0.008						
			(0.971)	(0.309)						
PFEM_BOARD					0.039	0.189***				
					(0.241)	(2.850)				
PFEM_TOP							0.073	0.128		
							(0.411)	(1.472)		
CFO_FEM									-0.003	-0.048
									(-0.068)	(-1.298)
LN(SIZE)	0.019	-0.068*	0.005	-0.018	0.029	-0.060*	0.016	-0.026	-	-
	(0.436)	(-1.882)	(0.156)	(-0.908)	(0.667)	(-1.775)	(0.570)	(-1.447)	-	-
CEO_DUAL	0.002	-0.005	-0.011	-0.010	-0.001	-0.005	-0.006	-0.017	-0.007	-0.029
	(0.041)	(-0.122)	(-0.217)	(-0.235)	(-0.021)	(-0.128)	(-0.117)	(-0.412)	(-0.140)	(-0.748)
GP_PTA	0.033*	0.003	0.034*	-0.004	0.033*	0.004	0.033*	-0.002	0.029	-0.004
	(1.710)	(0.200)	(1.796)	(-0.295)	(1.725)	(0.320)	(1.772)	(-0.153)	(1.433)	(-0.328)
LN(1+DELAY)	0.003	0.022	0.003	0.017	0.004	0.020	0.001	0.021	0.002	0.018
	(0.121)	(1.108)	(0.093)	(0.881)	(0.146)	(1.041)	(0.025)	(1.041)	(0.091)	(0.900)
LAG_UNDP	-0.051	-0.045	-0.046	-0.050*	-0.049	-0.043	-0.046	-0.049*	-0.031	-0.048*
	(-1.070)	(-1.516)	(-0.927)	(-1.824)	(-1.008)	(-1.462)	(-0.959)	(-1.826)	(-0.667)	(-1.677)
LN(1+AGE)	-0.010	0.008	-0.004	0.011	-0.008	0.008	-0.006	0.012	-0.009	0.009
	(-0.631)	(0.924)	(-0.275)	(1.206)	(-0.519)	(0.905)	(-0.368)	(1.285)	(-0.595)	(0.910)
LN(TA)	0.020	0.010	0.023*	0.002	0.019	0.011	0.023*	0.005	0.020	0.002
	(1.231)	(0.998)	(1.747)	(0.265)	(1.175)	(1.026)	(1.701)	(0.514)	(1.391)	(0.206)
HIGH_TECH	-0.003	-0.013	0.001	-0.014	-0.002	-0.011	0.001	-0.012	0.004	-0.013
	(-0.070)	(-0.593)	(0.023)	(-0.634)	(-0.057)	(-0.515)	(0.022)	(-0.561)	(0.107)	(-0.629)
STD19	3.263	5.420***	2.818	5.657***	3.301	5.322***	3.059	5.581***	3.379	5.624***

Decade	**1st**	**2nd**	**1st**	**2nd**	**1st**	**2nd**	**1st**	**2nd**	**1st**	**2nd**
	(1.619)	(3.565)	(1.456)	(3.635)	(1.619)	(3.537456)	(1.549)	(3.637)	(1.556)	(3.566)
R^2 (Adjusted R^2) %	11.497 (2.987)	12.780 (8.546)	11.707 (3.218)	10.668 (6.331)	10.824 (2.249)	13.648 (9.)	10.990 (2.431)	11.727 (7.442)	9.763 (1.879)	11.202 (7.285)
F-statistic	1.568	2.682***	1.436	2.269**	1.449	3.352***	1.416	2.343**	1.503	2.477**
N	115	217	115	217	115	217	115	217	113	214

5.1.4. Robustness checks

In this section, we present the results of two robustness checks we performed to the regressions presented above for the first research question.

The first test entails proving if the same results are obtained if it was used as variables of interest, variables that more accurately assess a group's degree of gender diversity. As a result, we measured gender diversity with the Blau (1977) and Shannon (1948) indices which are extensively used in many research fields and, specifically, in gender diversity studies (Abad et al., 2017; Campbell & Mínguez-Vera, 2008). The Blau index is computed as follows: $1 - \sum_{i=1}^{n} P_i^2$, where P_i is the percentage of women in the group (Blau, 1977). Its value varies from 0 and 0.5, being the maximum value the reference for maximum diversity, i.e., gender equality. Regarding the Shannon index, its formula is the following: $-\sum_{i=1}^{n} P_i \ln(P_i)$ (Shannon, 1948). The latter can have a value between 0 and 0.69, being once again the maximum value associated with a gender-balanced group. Since it is a logarithmic measure, the Shannon index is more sensitive to changes in gender diversity, although being two similar measures (Campbell & Mínguez-Vera, 2008).

The results obtained by replacing the percentage of women in both leadership groups with each one of the indices are similar to the ones presented before (in sign, magnitude, and significance[31]). The results of these tests can be found in Appendix F.

The other robustness test applied is the introduction of the year-fixed effect[32]. In fact, although the data is cross-sectional, the IPOs' information is collected throughout the years. Consequently, we need to control for this time effect.

By running the base models with dummies for each offer year[33] to control the year-effect, we observe that the findings are similar to the models without these control variables, with the exception of the model whose variable of interest is the dummy of at least one female director (DM_FEM_BOARD)[34]. In this model, the variable loses significance. Therefore, although we have detected year-effects, it did not change the overall results.

[31] Only in model 1 of the top management team does the significance level change to 10% (versus the 5% of the original model).
[32] Following the study of Badru et al. (2019a).
[33] It was removed observations from 2000, 2001, 2002, 2003, 2004, 2008, 2009 and 2012 due to their small number of observations (less than 6 IPOs).
[34] The results can be found in Appendix G.

5.2. Moderating effect of National Culture

Regarding the second research question of our study, we proposed to study the potential moderating effect of culture on the relation between gender diversity and underpricing. For that purpose, we hypothesise about this moderating effect for each leadership group and each of Hofstede's (2010) cultural dimensions.

5.2.1. Board Level

As presented in the methodology, it was added to the base model the cultural dimension variable and the interaction variable of itself with the variable of interest. Similarly to the results of the first research question, a positive statistical significance was found for the variables of interest related to the board (p-value of 5% or 10%). The results for the dummy reflecting a gender-diverse board (DM_FEM_BOARD) are presented in Table 13. Regarding this variable, it showed to be significant for the models including the PDI, UAI and LTO cultural dimensions, although no moderating effect was found.

Table 13: Multivariate regression analysis of RQ2 – DM_FEM_BOARD

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is DM_FEM_BOARD and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	-0.137*	-0.079	-0.112	-0.179**	-0.197*	-0.075
	(-1.691)	(-0.549)	(-1.500)	(-2.110)	(-1.928)	(-0.725)
DM_FEM_BOARD	0.114*	-0.069	0.061	0.143**	0.144*	0.020
	(1.858)	(-0.461)	(1.143)	(1.972)	(1.722)	(0.258)
LN(BOARD_SIZE)	-0.035	-0.032	-0.032	-0.038	-0.022	-0.032
	(-1.243)	(-1.185)	(-1.197)	(-1.380)	(-0.808)	(-1.216)
CEO_DUAL	0.012	0.006	0.009	0.005	0.012	0.007
	(0.376)	(0.201)	(0.291)	(0.149)	(0.376)	(0.243)
GP_PTA	0.014	0.012	0.013	0.014	0.011	0.012
	(1.266)	(1.103)	(1.147)	(1.351)	(0.983)	(1.105)
LN(1+DELAY)	0.018	0.015	0.015	0.013	0.017	0.013
	(1.072)	(0.989)	(0.932)	(0.784)	(1.100)	(0.717)
LAG_UNDP	-0.041*	-0.041*	-0.042*	-0.040*	-0.042*	-0.042*
	(-1.717)	(-1.712)	(-1.761)	(-1.673)	(-1.746)	(-1.753)
LN(1+AGE)	0.003	0.003	0.003	0.003	0.003	0.003
	(0.379)	(0.312)	(0.351)	(0.415)	(0.365)	(0.362)
LN(TA)	0.013	0.012	0.012	0.013	0.009	0.011
	(1.506)	(1.437)	(1.426)	(1.569)	(1.105)	(1.355)
HIGH_TECH	-0.017	-0.015	-0.015	-0.017	-0.020	-0.015
	(-0.882)	(-0.799)	(-0.781)	(-0.917)	(-0.986)	(-0.800)
STD19	4.705***	4.844***	4.668***	4.689***	4.606***	4.748***
	(3.862)	(3.957)	(3.803)	(3.905)	(3.806)	(3.923)
CD	0.001	0.000	0.000	0.001	0.002	0.000

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
	(0.744)	(-0.175)	(0.376)	(1.437)	(1.456)	(-0.256)
CD*DM_FEM_BOARD	-0.002	0.002	-0.001	-0.002	-0.002	0.000
	(-1.451)	(0.711)	(-0.543)	(-1.587)	(-1.364)	(0.232)
R^2 (Adjusted R^2) %	10.417	10.034	9.965	10.687	10.464	9.868
	(7.047)	(6.650)	(6.578)	(7.327)	(7.096)	(6.478)
F-statistic	2.638***	2.600***	2.548***	2.652***	2.548***	2.533***
N	332	332	332	332	332	332

Regarding the results for PFEM_BOARD, as seen in Table 14, the variable is positively associated with underpricing for PDI and UAI models, and a negative moderating effect was found for both cultural dimensions with a significance level of 10% (H2.1.1 and H2.4.1 were confirmed). Our evidence shows that Power Distance and Uncertainty Avoidance moderate the relation between female representation at the board level and underpricing such that higher levels of PDI and UAI would weaken the positive relation between the independent and dependent variables.

Table 14: Multivariate regression analysis of RQ2 – PFEM_BOARD

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is PFEM_BOARD and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
α	-0.144*	-0.142	-0.135*	-0.176**	-0.176*	-0.054
	(-1.865)	(-1.036)	(-1.926)	(-2.279)	(-1.930)	(-0.557)
PFEM_BOARD	0.417**	0.134	0.268*	0.466**	0.366	-0.140
	(2.241)	(0.224)	(1.829)	(2.159)	(1.431)	(-0.605)
LN(BOARD_SIZE)	-0.025	-0.023	-0.025	-0.029	-0.016	-0.026
	(-0.941)	(-0.909)	(-0.967)	(-1.107)	(-0.619)	(-0.997)
CEO_DUAL	0.014	0.007	0.010	0.005	0.011	0.008
	(0.413)	(0.218)	(0.331)	(0.161)	(0.353)	(0.275)
GP_PTA	0.014	0.012	0.014	0.014	0.011	0.013
	(1.270)	(1.117)	(1.257)	(1.343)	(1.022)	(1.235)
LN(1+DELAY)	0.018	0.015	0.015	0.013	0.016	0.013
	(1.098)	(0.969)	(0.936)	(0.775)	(0.992)	(0.729)
LAG_UNDP	-0.042*	-0.041	-0.042*	-0.041*	-0.043*	-0.039
	(-1.760)	(-1.704)	(-1.724)	(-1.685)	(-1.786)	(-1.613)
LN(1+AGE)	0.003	0.003	0.003	0.004	0.003	0.003
	(0.397)	(0.412)	(0.384)	(0.452)	(0.366)	(0.352)
LN(TA)	0.012	0.011	0.012	0.013	0.009	0.012
	(1.465)	(1.327)	(1.443)	(1.518)	(1.092)	(1.402)
HIGH_TECH	-0.015	-0.014	-0.014	-0.015	-0.019	-0.013
	(-0.783)	(-0.718)	(-0.728)	(-0.774)	(-0.917)	(-0.700)
STD19	4.627***	4.742***	4.454***	4.630***	4.534***	4.535***
	(3.821)	(3.880)	(3.682)	(3.868)	(3.757)	(3.759)
CD	0.001	0.001	0.001	0.001	0.001	-0.001
	(0.803)	(0.371)	(0.957)	(1.509)	(1.323)	(-0.866)

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
CD*PFEM_BOARD	-0.007*	0.000	-0.004	-0.005*	-0.004	0.005
	(-1.945)	(-0.039)	(-1.333)	(-1.833)	(-1.055)	(1.075)
R^2 (Adjusted R^2) %	10.803	9.865	10.485	10.946	10.319	10.270
	(7.448)	(6.475)	(7.117)	(7.596)	(6.945)	(6.895)
F-statistic	2.670***	2.495***	2.532***	2.614***	2.474***	2.573***
N	332	332	332	332	332	332

These results contradict our expectations presented in the hypotheses definitions. In fact, regarding the Power Distance dimension, we expected that it would strengthen a positive relation between female presence and underpricing, given that in high-PDI societies, inequalities are easily expected and understood, which could imply a greater prejudice towards women in leadership roles. However, the weaker effect that we found could be explained given the importance of status and power in high-PDI countries. Women in leadership positions, given their status, could have their power legitimised, which may lead to investors not requiring a premium for greater female presence. This explanation can also be supported by the previously mentioned study by Heilman et al. (1989) which found that stereotypic considerations decrease when women are already depicted as managers or successful managers.

In relation to the result for the Uncertainty Avoidance dimension, once more the prediction was for a stronger effect between the two variables in the presence of greater UAI. Through the lens of the ex-ante uncertainty theory, we have predicted that the increased representation of women in leadership positions, as it is a novelty in most countries, would lead to greater uncertainty and, therefore, a greater underpricing. Nevertheless, Hofstede (2010) also denotes a strict relation between this dimension and anxiety, being that in high-UAI countries, people try to mitigate this uncertainty by any means. For that reason, investors might prefer, in the presence of an additional source of uncertainty (and anxiety), to not demand any premium, and the price is closer to the true value of the company, thus a lower underpricing.

Surprisingly the Masculinity dimension was found to not influence the relation between female representation and underpricing for both variables. These results are somewhat counterintuitive given the definitions of both poles of the dimension.

5.2.2. Top Management Team Level

In what concerns the possible moderating effect of culture when testing with the variable of interest is related with top management, the results show not only no individual significance of the variable of interest, but also no moderating effect of the cultural

dimensions. The results for these models can be found in Appendix H.

5.2.3. Robustness Checks

Following the procedure done in RQ1 analysis, the same robustness tests were applied for this research question.

Regarding the usage of more robust measures of gender diversity, the Blau and Shannon indices, the main differences in the results rely on the board analysis. It can be seen from the data in Table 15 that, in addition to the individual significance of the variables of interest for the PDI, MAS and UAI models, also the LTO regression present a positive impact of the Blau variable on underpricing at the 10% level of significance. Regarding the interaction variables, the only two that present a statistical significance at the 10% level are the same as presented previously, PDI and UAI, showing the same negative effect. Similar results were obtained for the regressions using the SHANNON_BOARD variable and are presented in Appendix F. Our findings for the top management team are consistent with the ones presented in the previous subchapter, with neither significance of the individual independent variable nor significance of the interaction variable (the tables with the results for this group are in Appendix F).

Table 15: Multivariate regression analysis of RQ2 - Board Level - Robustness Checks (Blau index)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is BLAU_BOARD and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI (1)**	**IDV (2)**	**MAS (3)**	**UAI (4)**	**LTO (5)**	**IVR (6)**
α	-0.148*	-0.149	-0.139*	-0.182**	-0.201**	-0.058
	(-1.867)	(-1.056)	(-1.944)	(-2.265)	(-2.138)	(-0.583)
BLAU_BOARD	0.323**	0.163	0.227*	0.369**	0.377*	-0.056
	(2.127)	(0.354)	(1.764)	(2.049)	(1.821)	(-0.298)
LN(BOARD_SIZE)	-0.028	-0.025	-0.027	-0.031	-0.016	-0.027
	(-1.031)	(-0.979)	(-1.054)	(-1.197)	(-0.617)	(-1.052)
CEO_DUAL	0.013	0.007	0.011	0.005	0.012	0.008
	(0.396)	(0.244)	(0.346)	(0.148)	(0.400)	(0.265)
GP_PTA	0.014	0.012	0.014	0.015	0.012	0.013
	(1.291)	(1.107)	(1.268)	(1.366)	(1.037)	(1.205)
LN(1+DELAY)	0.018	0.015	0.015	0.013	0.017	0.013
	(1.107)	(0.987)	(0.946)	(0.783)	(1.079)	(0.715)
LAG_UNDP	-0.041*	-0.041*	-0.041*	-0.040	-0.042*	-0.040
	(-1.697)	(-1.705)	(-1.687)	(-1.630)	(-1.742)	(-1.621)
LN(1+AGE)	0.003	0.003	0.003	0.004	0.003	0.003
	(0.407)	(0.386)	(0.321)	(0.441)	(0.323)	(0.325)
LN(TA)	0.013	0.011	0.013	0.013	0.009	0.012

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	(1.499)	(1.339)	(1.489)	(1.551)	(1.096)	(1.393)
HIGH_TECH	-0.015	-0.013	-0.014	-0.015	-0.019	-0.013
	(-0.774)	(-0.707)	(-0.713)	(-0.776)	(-0.940)	(-0.705)
STD19	4.626***	4.757***	4.429***	4.606***	4.499***	4.559***
	(3.819)	(3.906)	(3.646)	(3.854)	(3.734)	(3.780)
CD	0.001	0.001	0.001	0.001	0.002	-0.001
	(0.841)	(0.418)	(0.963)	(1.514)	(1.601)	(-0.718)
CD*BLAU_BOARD	-0.005*	-0.001	-0.003	-0.004*	-0.005	0.003
	(-1.759)	(-0.154)	(-1.248)	(-1.679)	(-1.461)	(0.795)
R^2 (Adjusted R^2) %	10.657	9.916	10.471	10.831	10.603	10.119
	(7.296)	(6.527)	(7.103)	(7.477)	(7.240)	(6.738)
F-statistic	2.684***	2.542***	2.601***	2.641***	2.535***	2.577***
N	332	332	332	332	332	332

When we controlled for the year-fixed effects, similar results to the standard models were found for all variables of interest and leadership groups. Nevertheless, we found a slight change in the model of PFEM_BOARD with LTO, where we found a significance of 10% for the individual variable (similar to the relation presented using the Blau and Shannon's indices)[35]. The results for these analyses can be found in Appendix G.

[35] With this independent variable, also the logarithm of total assets presents a significance of 10% in the PDI and UAI models.

6. Conclusions

The World Economic Forum (2022) expects that it will take 136 years to close the global gender gap. This inequality persists in every field of our life, and more attention has been paid to businesses and gender representation in leadership roles. A much-debated question is whether gender quotas, i.e., mandatory requirements, and non-binding recommendations, should be implemented. Although many countries have adopted these measures and a slight positive evolution can be denoted, the current data still illustrate a gender gap in companies' executives and board members. Accordingly, research in this field emerges not only for the sake of reducing the data bias (since consistently gender differences are not analysed in academic research) but also as an attempt to prove to companies that gender diversity is not only a matter of social justice but also a source of greater performance.

The present research aimed to assess if there is a link between underpricing and female representativeness in firms' leadership (by analysing both board level and top management team level gender diversity). Additionally, we argued that the potential gender bias in underpricing could be explained by the cultural differences, analysed by which country's national culture (as defined by Hofstede (2010)).

In accordance with the extant literature that addresses the impact of gender diverse leaderships, in general, our research found little evidence of a link between the variables across the entire sample period (2000-2020). However, the results showed differences between the two leadership groups. At the board level, a positive relation was prevalent between underpricing and female directors' presence. In contrast, within the top management team analysis, it was mainly observed no relation between the level of women executives and IPOs underpricing. Thus, these findings suggest that investors' perceptions about female leaders might differ according to their role in the company.

One of the more significant findings that emerged from this study is that the positive relation between the representation of female directors and underpricing is driven by IPOs conducted in the second decade of our sample, 2010-2020 (where it was found strong statistical evidence). This finding shed light on a possible greater gender bias in recent years, leading to a more significant prejudice towards women, thus investors demanding a larger premium in the form of the initial return (underpricing). In fact, the greater gender bias must be driven by the more prominent female presence.

Regarding the moderating effect of culture on the previously mentioned relation, some evidence was found to support that the Power Distance and the Uncertainty Avoidance

dimensions influence the relation between board gender diversity and underpricing. Although, contrarily to our expectations, both dimensions lessen the positive relation between the variables.

In general, therefore, it seems that investors perceive women negatively or at least as a source of uncertainty when holding leadership positions since the greater female presence on boards leads to a greater underpricing. In addition, it was showed that each country's culture can influence this perception.

Given the inconclusive results and the study's limitations (further explained below), it is difficult to gather clear practical implications from these findings. In fact, in this field, the main constraint is that few women are in leadership roles, which jeopardises the conclusions that can be drawn. Additionally, the underpricing phenomenon has been a puzzle in finance literature since it was first reported by Ibbotson (1975). Thus, without disregarding the extensive literature on possible explanations for the phenomenon, we believe that the approach of policymakers and regulators must be to find solutions and actions to diminish this misvaluation of IPO firms. However, regarding implications for management, our univariate analysis showed that indeed the levels of female representation across leadership groups are considerably below the expected and desired gender equality. Companies should base their decisions on both meritocracy and equality, not constraining diversity of any form.

Regarding the contribution of this study to literature, in the underpricing field, we expanded the knowledge on the puzzling phenomenon of underpricing and focusing on aspects that are scarcely studied. We also contribute largely to the gender literature as we present additional findings on gender differences in business.

Our study has some limitations that must be considered when analysing our findings. Firstly, from a statistics point of view, when analysing gender differences, the samples should be more balanced in order to achieve conclusive results about the impact of women, which might be null. In fact, our univariate analysis showed an extremely low representation of women both at the board and top management team levels. Thus, it is difficult to study any phenomenon related to the impact of women in company-related aspects. Secondly, as our study of culture's moderating effect had an exploratory nature, the methodology applied could have been different, leading to better results. Finally, the weak support regarding cultural influence could be due to the low range of scores (in each dimension).

For future research we propose four main venues. First, we propose different methods to assess the cultural influence both in terms of modelling, and variables to assess national

culture (e.g. the Schwart's framework (1992)). Secondly, we suggest a geographical extension to overcome the limitations mentioned above. Thirdly, it might also be worth studying the other IPO puzzle – the long-run underperformance – and analyse if female representativeness in leadership positions can impact this phenomenon. Finally, one extremely important complement of our study is to address the quotas requirements. In fact, in countries with an imposed/suggested percentage of female directors, companies might appoint women just to comply with the rule. Thus, it can lead to women being appointed not for their merit but because of their gender. As a result, in light of our results, the greater underpricing in the presence of greater female representativeness might be justified by the fact that the women appointed to meet the legal obligation are less competent. Therefore, investors require a greater first-day return. Hence, we call for more studies to understand the impact of an imposed gender balance on underpricing and company performance in general. However, paradoxically, given the meagre female representativeness in leadership roles, such as CFO and CEO's positions, this will only be possible if countries do impose gender balance.

7. References

Abad, D., Lucas-Pérez, M. E., Minguez-Vera, A., & Yagüe, J. (2017). Does gender diversity on corporate boards reduce information asymmetry in equity markets? *BRQ Business Research Quarterly*, *20*(3), 192–205.

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, *94*(2), 291–309.

Allen, F., & Faulhaber, G. R. (1989). Signaling by underpricing in the IPO market. *Journal of Financial Economics*, *23*(2), 303–323.

Ammer, M. A., & Ahmad-Zaluki, N. A. (2017). The role of the gender diversity of audit committees in modelling the quality of management earnings forecasts of initial public offers in Malaysia. *Gender in Management: An International Journal*, *32*(6), 420–440.

Arora, N., & Singh, B. (2020). Do Female Directors Signal Indian SME IPOs Quality? Evidence From a Quantile Regression Approach. *Global Business Review*, 1–21.

Asteriou, D., & Hall, S. G. (2021). *Applied Econometrics* (4th ed.). Red Globe Press.

Badru, B. O., Ahmad-Zaluki, N. A., & Wan-Hussin, W. N. (2017). Board characteristics and the amount of capital raised in the Malaysian IPO market. *Journal of Multinational Financial Management*, *42–43*, 37–55.

Badru, B. O., Ahmad-Zaluki, N. A., & Wan-Hussin, W. N. (2019a). Signalling IPO quality through female directors. *International Journal of Managerial Finance*, *15*(5), 719–743.

Badru, B. O., Ahmad-Zaluki, N. A., & Wan-Hussin, W. N. (2019b). Women on corporate boards and allocation of capital raised through IPOs. *Management Decision*, *57*(3), 547–568.

Baron, D. P. (1982). A Model of the Demand for Investment Banking Advising and Distribution Services for New Issues. *The Journal of Finance*, *37*(4), 955–976.

Baron, D. P., & Holmström, B. (1980). The Investment Banking Contract For New Issues Under Asymmetric Information: Delegation And The Incentive Problem. *The Journal of Finance*, *35*(5), 1115–1138.

Beatty, R. P., & Ritter, J. R. (1986). Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, *15*(1), 213–232.

Bennouri, M., Chtioui, T., Nagati, H., & Nekhili, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking & Finance*, *88*, 267–291.

Bigelow, L., Lundmark, L., Parks, J. M., & Wuebker, R. (2014). Skirting the Issues: Experimental Evidence of Gender Bias in IPO Prospectus Evaluations. *Journal of*

Management, *40*(6), 1732–1759.

Black, B. S., & Gilson, R. J. (1998). Venture capital and the structure of capital markets: banks versus stock markets1The authors are grateful for helpful suggestions from the editor and an anonymous referee, and from Anant Admati, Erik Berglof, Stephen Choi, Kevin Davis, Uri Geiger, Victor. *Journal of Financial Economics*, *47*(3), 243–277.

Blau, P. M. (1977). *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. Free Press.

Booth, J. R., & Chua, L. (1996). Ownership dispersion, costly information, and IPO underpricing. *Journal of Financial Economics*, *41*(2), 291–310.

Borghans, L., Heckman, J. J., Golsteyn, B. H. H., & Meijers, H. (2009). Gender Differences in Risk Aversion and Ambiguity Aversion. *Journal of the European Economic Association*, *7*(2–3), 649–658.

Bradley, D. J., Cooney Jr., J. W., Dolvin, S. D., & Jordan, B. D. (2006). Penny Stock IPOs. *Financial Management*, *35*(1), 5–29.

Bradley, D. J., & Jordan, B. D. (2002). Partial Adjustment to Public Information and IPO Underpricing. *Journal of Financial and Quantitative Analysis*, *37*(4), 595–616.

Bradley, D. J., Jordan, B. D., & Ritter, J. R. (2003). The Quiet Period Goes out with a Bang. *The Journal of Finance*, *58*(1), 1–36.

Brau, J. C., & Fawcett, S. E. (2006). Initial Public Offerings: An Analysis of Theory and Practice. *The Journal of Finance*, *61*(1), 399–436.

Brau, J. C., Francis, B., & Kohers, N. (2003). The Choice of IPO versus Takeover: Empirical Evidence. *The Journal of Business*, *76*(4), 583–612.

Brennan, M. J., & Franks, J. (1997). Underpricing, ownership and control in initial public offerings of equity securities in the UK. *Journal of Financial Economics*, *45*(3), 391–413.

Cameron, J. J., & Stinson, D. A. (2019). Gender (mis)measurement: Guidelines for respecting gender diversity in psychological research. *Social and Personality Psychology Compass*, *13*(11), 1–14.

Campbell, K., & Mínguez-Vera, A. (2008). Gender Diversity in the Boardroom and Firm Financial Performance. *Journal of Business Ethics*, *83*(3), 435–451.

Campbell, K., & Minguez Vera, A. (2010). Female board appointments and firm valuation: short and long-term effects. *Journal of Management & Governance*, *14*(1), 37–59.

Carrasco, A., Francoeur, C., Labelle, R., Laffarga, J., & Ruiz-Barbadillo, E. (2015). Appointing Women to Boards: Is There a Cultural Bias? *Journal of Business Ethics*, *129*(2), 429–444.

Carter, R., & Manaster, S. (1990). Initial Public Offerings and Underwriter Reputation. *The Journal of Finance*, *45*(4), 1045–1067.

Celikyurt, U., Sevilir, M., & Shivdasani, A. (2010). Going public to acquire? The acquisition motive in IPOs. *Journal of Financial Economics*, *96*(3), 345–363.

Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. (2001). Wealth and the effects of founder management among IPO-stage new ventures. *Strategic Management Journal*, *22*(6–7), 641–658.

Chemmanur, T. J., & Fulghieri, P. (1999). A Theory of the Going-Public Decision. *The Review of Financial Studies*, *12*(2), 249–279.

Conyon, M. J., & He, L. (2017). Firm performance and boardroom gender diversity: A quantile regression approach. *Journal of Business Research*, *79*, 198–211.

De Masi, S., Słomka-Gołębiowska, A., & Paci, A. (2021). Women on boards and monitoring tasks: an empirical application of Kanter's theory. *Management Decision*, *59*(13), 56–72.

Demers, E., & Lewellen, K. (2003). The marketing role of IPOs: evidence from internet stocks. *Journal of Financial Economics*, *68*(3), 413–437.

Dwyer, P. D., Gilkeson, J. H., & List, J. A. (2002). Gender differences in revealed risk taking: evidence from mutual fund investors. *Economics Letters*, *76*(2), 151–158.

Eagly, A., & Karau, S. (2002). Role Congruity Theory of Prejudice Toward Female Leaders. *Psychological Review*, *109*, 573–598. https://doi.org/10.1037//0033-295X.109.3.573

Eckel, C. C., & Grossman, P. J. (2002). Sex differences and statistical stereotyping in attitudes toward financial risk. *Evolution and Human Behavior*, *23*(4), 281–295.

European Institute for Gender Equality. (2022a). *Largest listed companies: CEOs, executives and non-executives*. https://eige.europa.eu/gender-statistics/dgs/indicator/wmidm_bus_bus__wmid_comp_compex/line/year:2022-B1,2021-B2,2021-B1,2020-B2,2020-B1,2019-B2,2019-B1,2018-B2,2018-B1,2017-B2,2017-B1,2016-B2,2016-B1,2015-B2,2015-B1,2014-B2,2014-B1,2013-B2,2013-B1,2012-B

European Institute for Gender Equality. (2022b). *Largest listed companies: presidents, board members and employee representatives*. https://eige.europa.eu/gender-statistics/dgs/indicator/wmidm_bus_bus__wmid_comp_compbm/line/year:2003-B2,2004-B2,2005-B2,2006-B2,2007-B2,2008-B2,2009-B2,2010-B2,2011-B2,2012-B1,2012-B2,2013-B1,2013-B2,2014-B1,2014-B2,2015-B1,2015-B2,2016-B1,2016-

B2,2017-B

European Parliament. (2022). *Women on boards: deal to boost gender balance in companies*. https://www.europarl.europa.eu/news/pt/press-room/20220603IPR32195/women-on-boards-deal-to-boost-gender-balance-in-companies

Green, C. P., & Homroy, S. (2018). Female directors, board committees and firm performance. *European Economic Review*, *102*, 19–38.

Gregory-Smith, I., Main, B. G. M., & O'Reilly III, C. A. (2014). Appointments, Pay and Performance in UK Boardrooms by Gender. *The Economic Journal*, *124*(574), F109–F128.

Grinblatt, M., & Hwang, C. Y. (1989). Signalling and the Pricing of New Issues. *The Journal of Finance*, *44*(2), 393–420.

Handa, R., & Singh, B. (2015). Women directors and IPO underpricing: evidence from Indian markets. *Gender in Management*, *30*(3), 186–205.

Heilman, M. E., Block, C. J., Martell, R. F., & Simon, M. C. (1989). Has anything changed? Current characterizations of men, women, and managers. *Journal of Applied Psychology*, *74*(6), 935–942.

Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-Related Values* (1st ed.). SAGE Publications.

Hofstede, G. (2001). *Culture Consequences - Comparing Values, Behaviours, Institutions, an Organizations Across Nations* (2nd ed.). Sage.

Hofstede, G. (2022a). *Compare countries*. Hofstede Insights. https://www.hofstede-insights.com/product/compare-countries/.

Hofstede, G. (2022b). *FAQ*. Hofstede Insights. https://hi.hofstede-insights.com/faq

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations: Software of the Mind* (3rd ed.). McGraw Hill.

Hughes, P. J., & Thakor, A. V. (1992). Litigation Risk, Intermediation, and the Underpricing of Initial Public Offerings. *The Review of Financial Studies*, *5*(4), 709–742.

Ibbotson, R. G. (1975). Price performance of common stock new issues. *Journal of Financial Economics*, *2*(3), 235–272.

Ibbotson, R. G., & Jaffe, J. F. (1975). "HOT ISSUE" MARKETS. *The Journal of Finance*, *30*(4), 1027–1042.

Kaur, A., & Singh, B. (2015). Does Gender Diversity on Indian Boards Impede IPO Underpricing? *Management and Labour Studies*, *40*(1–2), 194–205.

Kaur, A., & Singh, B. (2019). Edifying role of corporate reputation in new issue market: Indian evidence. *Asia-Pacific Journal of Business Administration*, *11*(2), 159–170.

Kawakami, C., White, J. B., & Langer, E. J. (2000). Mindful and Masculine: Freeing Women Leaders From the Constraints of Gender roles. *Journal of Social Issues*, *56*(1), 49–63.

Lee, P. J., Taylor, S. L., & Walter, T. S. (1996). Australian IPO pricing in the short and long run. *Journal of Banking & Finance*, *20*(7), 1189–1210.

Liu, Y., Wei, Z., & Xie, F. (2014). Do women directors improve firm performance in China? *Journal of Corporate Finance*, *28*, 169–184.

Loughran, T., & Ritter, J. R. (2004). Why Has IPO Underpricing Changed over Time? *Financial Management*, *33*(3), 5–37.

Loughran, T., Ritter, J. R., & Rydqvist, K. (1994). Initial public offerings: International insights. *Pacific-Basin Finance Journal*, *2*(2), 165–199.

Maksimovic, V., & Pichler, P. (2001). Technological Innovation and Initial Public Offerings. *The Review of Financial Studies*, *14*(2), 459–494.

Mallin, C. A. (2013). *Corporate Governance* (4th ed.). Oxford Univeristy Press.

Martinez-Jimenez, R., Hernández-Ortiz, M. J., & Cabrera Fernández, A. I. (2020). Gender diversity influence on board effectiveness and business performance. *Corporate Governance: The International Journal of Business in Society*, *20*(2), 307–323.

Matsa, D. A., & Miller, A. R. (2013). A Female Style in Corporate Leadership? Evidence from Quotas. *American Economic Journal: Applied Economics*, *5*(3), 136–169.

Maxfield, S., Shapiro, M., Gupta, V., & Hass, S. (2010). Gender and risk: women, risk taking and risk aversion. *Gender in Management: An International Journal*, *25*(7), 586–604.

McGuinness, P. B. (2018). IPO Firm Performance and Its Link with Board Officer Gender, Family-Ties and Other Demographics. *Journal of Business Ethics*, *152*(2), 499–521.

McGuinness, P. B. (2019). Beyond the Board Realm: Women in Senior Management and their Impact on IPO Capital Funding. *British Journal of Management*, *30*(2), 389–414.

Ming, C., & Hock Eam, L. (2016). Estimating the nonlinear effects of female directors on financial performance. *Gender in Management: An International Journal*, *31*(2), 97–113.

Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, *48*(3), 261–297.

Modigliani, F., & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, *53*(3), 433–443.

Mohan, N. J., & Chen, C. R. (2004). Are IPOs Priced Differently Based Upon Gender?

Journal of Behavioral Finance, *5*(1), 57–65.

Mok, H. M. K., & Hui, Y. V. (1998). Underpricing and aftermarket performance of IPOs in Shanghai, China. *Pacific-Basin Finance Journal*, *6*(5), 453–474.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221.

Nielsen, S., & Huse, M. (2010). The Contribution of Women on Boards of Directors: Going beyond the Surface. *Corporate Governance: An International Review*, *18*(2), 136–148.

Rau, P. R., Sandvik, J., & Vermaelen, T. (2022). Valuing Soft Information: IPO Price Formation and Board Gender Diversity. *ECGI Working Paper Series in Finance*, *2022*(756).

Reutzel, C. R., & Belsito, C. A. (2015). Female directors and IPO underpricing in the US. *International Journal of Gender and Entrepreneurship*, *7*(1), 27–44.

Ritter, J. R. (1984). The "Hot Issue" Market of 1980. *The Journal of Business*, *57*(2), 215–240.

Rock, K. (1986). Why new issues are underpriced. *Journal of Financial Economics*, *15*(1), 187–212.

Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International Review*, *15*(2), 404–413.

S&P Global. (2022). *Capital IQ*. https://www.capitaliq.com/

Sarin, R., & Wieland, A. (2016). Risk aversion for decisions under uncertainty: Are there gender differences? *Journal of Behavioral and Experimental Economics*, *60*, 1–8.

Schein, V. E. (1973). The relationship between sex role stereotypes and requisite management characteristics. *Journal of Applied Psychology*, *57*(2), 95–100.

Schubert, R., Brown, M., Gysler, M., & Brachinger, H. W. (1999). Financial Decision-Making: Are Women Really More Risk Averse? *American Economic Review*, *89*(2), 381–385.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, *25*(C), 1–65.

Scott, J. H. (1976). A Theory of Optimal Capital Structure. *The Bell Journal of Economics*, *7*(1), 33–54.

Shannon, C. E. (1948). A Mathematical Theory of Communication. *Bell System Technical Journal*, *27*(3), 379–423.

Strong, N., & Xu, X. (2003). Understanding the Equity Home Bias: Evidence from Survey Data. *The Review of Economics and Statistics*, *85*(2), 307–312.

Terjesen, S., Aguilera, R. V, & Lorenz, R. (2015). Legislating a Woman's Seat on the Board: Institutional Factors Driving Gender Quotas for Boards of Directors. *Journal of Business Ethics*, *128*(2), 233–251.

Teti, E., & Montefusco, I. (2021). Corporate governance and IPO underpricing: evidence from the italian market. *Journal of Management and Governance*.

Tiniç, S. M. (1988). Anatomy of Initial Public Offerings of Common Stock. *The Journal of Finance*, *43*(4), 789–822.

United Nations Population Division. (2022). *Sex ratio by region, subregion and country, 1950-2021 (males per 100 females)*. https://population.un.org/wpp/Download/Standard/Population/

United States Department of Labor. (2022). *Standard Industrial Classification (SIC) - Manual Division Structure*. https://www.osha.gov/data/sic-manual

Welch, I. (1989). Seasoned Offerings, Imitation Costs, and the Underpricing of Initial Public Offerings. *The Journal of Finance*, *44*(2), 421–449.

Welch, I. (1992). Sequential Sales, Learning, and Cascades. *The Journal of Finance*, *47*(2), 695–732.

World Economic Forum. (2022). *Global Gender Gap Report 2022*.

Zingales, L. (1995). Insider Ownership and the Decision to Go Public. *The Review of Economic Studies*, *62*(3), 425–448.

8. Appendices

8.1. Appendix A – Research variables

Table 16: Description of research variables

Variable	Description
Dependent variable	
Underpricing	*Raw return (UNDP)*: percentage change in the first trading day closing price from the offer price
Independent variable	
Female representation	*Dummy Board (DM_FEM_BOARD)*: female dummy variable with "1" assigned to firms with at least 1 woman director on the Board of Directors or equivalent body and "0" otherwise *Dummy Top (DM_FEM_TOP)*: female dummy variable with "1" assigned to firms with at least 1 woman executive on the top management team and "0" otherwise *Proportion Board (PFEM_BOARD)*: proportion of female directors on the Board of Directors or equivalent body *Proportion Top (PFEM_TOP)*: proportion of female executives on the top management team *Dummy CEO (CEO_FEM)*: female dummy variable with "1" assigned to firms with a female CEO and "0" otherwise *Dummy CFO (CFO_FEM)*: female dummy variable with "1" assigned to firms with a female CFO and "0" otherwise
Moderators	
Cultural dimensions	*Power distance index (PDI)*: power distance index score of each country measured by Hofstede (2001), ranging from 0 to 100 *Individualism index (IDV)*: individualism versus collectivism score of each country measured by Hofstede (2001), ranging from 0 to 100 *Masculinity index (MAS)*: masculinity score of each country measured by Hofstede (2001), ranging from 0 to 100 *Uncertainty avoidance index (UAI)*: uncertainty avoidance index score of each country measured by Hofstede (2001), ranging from 0 to 100 *Long term orientation index (LTO)*: long term orientation versus short term orientation score of each country measured by Hofstede (2010), ranging from 0 to 100 *Indulgence vs. restraint index (IVR)*: indulgence versus restraint score of each country measured by Hofstede (2010), ranging from 0 to 100
Control variables (issue-specific)	
IPO size	*Proportion of gross proceeds in total assets (GP_PTA)*: ratio that measures gross proceeds relative to the firm's total assets (book value)
Listing delay	*Delay (DELAY)*: number of days between the offer date and the first trading day
Lagged Underpricing	*Lagged (LAG_UNDP)*: average underpricing of the other sample firms that issued in the previous 6 months
Control variables (company-related)	
IPO age	*Age (AGE)*: difference between the IPO year and the incorporation/foundation year of the company
Firm size	*Total assets (TA)*: book value of total assets as expressed in millions
Industry risk	*Dummy tech (HIGH_TECH)*: dummy variable with "1" assigned to firms considered to be in an industry of high technology and "0" otherwise
Ex-ante risk	*Standard deviation (STD19)*: standard deviation of daily returns from the first 20 trading days, excluding the IPO date
Control variables (governance-related)	
Board size	*Board size (BOARD_SIZE)*: number of directors on the Board of Directors or equivalent body
Top management team size	*Top size (TOP_SIZE)*: number of executives on the top management team
CEO duality	*Dummy Duality (CEO_DUAL)*: dummy variable with "1" assigned to firms whose CEO and Chairperson are the same

8.2. Appendix B – Underpricing: additional analyses

Table 17: Underpricing analysis by offer year

This table shows the relation between mean underpricing and IPO's offer size (in this case, defined as gross proceeds). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). As the underpricing variable (initial return) was winsorized, it is also presented its mean values. Information related to IPOsis from Capital IQ.

	Offer size≤ 150M	**150M<Offer size≤300M**	**300M<Offer size≤450M**	**Offer size> 450M**
Number of IPOs	127	70	43	102
Mean initial return	0.372	0.640	0.010	0.183
Mean initial return (winsorized)	0.043	0.068	0.019	0.049

Table 18: Underpricing analysis by company age

This table shows the relation between mean underpricing and company's age. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). Age is the number of years between the year of incorporation and the IPO year. As the underpricing variable (initial return) was winsorized, it is also presented its mean values. Information related with both IPOs and companies is from Capital IQ.

	Age≤15 years	**15<Age≤30 years**	**30<Age≤45 years**	**Age>45 years**
Number of IPOs	141	70	33	98
Mean initial return	0.647	0.008	0.049	0.180
Mean initial return (winsorized)	0.052	0.033	0.060	0.044

8.3. Appendix C – Distribution of women in leadership

Table 19: Distribution of female directors on the board

This table presents an overview of the distribution of women on the IPO firms' boards. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The number of companies with board information is 342. Information related to IPOs is from Capital IQ and people's information is from the company's prospectus.

No. female directors	**No. of companies**	**% Companies**
0	128	37.43
1	100	29.24
2	57	16.67
3	33	9.65
4	16	4.68
5	3	0.88
6	4	1.17
7	1	0.29

Table 20: Distribution of female executives on the top management team

This table presents an overview of the distribution of women on the IPO firms' top management teams. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The number of companies with top management team information is 340 due to lack of information. Information related to IPOs is from Capital IQ and people's information is from the company's prospectus.

No. female executives	**No. of companies**	**% Companies**
0	193	56.76
1	78	22.94
2	33	9.71
3	25	7.35

No. female executives	No. of companies	% Companies
4	7	2.06
5	3	0.88
6	1	0.29

8.4. Appendix D – Gender comparison: additional analyses

Table 21: Sample comparison based on gender - CFO

This table presents equality tests for both means and medians, with the subgroups being "top management teams with at least one woman" and "top management teams with no women" (using the variable DM_FEM_TOP). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). In the second and third columns, are each variable's means and medians (in parathesis). In the fourth and fifth columns, there are the t-test and the Wilcoxon non-parametric test statistics, respectively. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Variable	Female	Male	t-value	Wilcoxon Z
UNDP	0.044	0.046	0.082	0.380
	(0.033)	(0.024)		
GP_TA	1.259	1.171	-0.371	0.631
	(0.515)	(0.567)		
LN(1+DELAY)	0.785	0.773	-0.117	0.215
	(0.693)	(0.693)		
LAG_UNDP	0.185	0.207	0.393	0.038
	(0.054)	(0.060)		
LN(1+AGE)	2.955	3.079	0.614	0.748
	(2.890)	(3.045)		
LN(TA)	5.663	6.010	1.059	1.304
	(5.221)	(6.120)		
HIGH_TECH	0.452	0.444	-0.106	0.090
	(0.000)	(0.000)		
STD19	0.021	0.019	-1.272	1.078
	(0.019)	(0.016)		
CEO_DUAL	0.119	0.123	0.070	0.039
	(0.000)	(0.000)		

Table 22: Underpricing analysis by proportion of women on the board

This table shows the relation between mean underpricing and the IPO firm's proportion of women on the board (using the variable PFEM_BOARD). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). As the underpricing variable (initial return) was winsorized, it is also presented its mean values. Information related to IPOsis from Capital IQ.

	% women board ≤10%	10%<% women board≤20%	20%<% women board≤30%	30%<% women board≤40%	% women board>40%
Number of IPOs	150	80	52	36	24
Mean initial return	0.355	0.478	-0.007	0.506	0.073
Mean initial return (winsorized)	0.033	0.051	0.018	0.128	0.061

Table 23: Underpricing analysis by proportion of women on the top management team

This table shows the relation between mean underpricing and the IPO firm's proportion of women on the board (using the variable PFEM_BOARD). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The number of companies with top management team information is 340 due to lack of information. As the underpricing variable (initial return) was winsorized, it is also presented its mean values. Information related to IPOsis from Capital IQ.

	% women top ≤10%	10%<% women top≤20%	20%<% women top≤30%	30%<% women top≤40%	% women top>40%
Number of IPOs	212	55	29	25	19

	% women top ≤10%	10%<% women top≤20%	20%<% women top≤30%	30%<% women top≤40%	% women top>40%
Mean initial return	0.379	0.443	0.012	0.040	0.245
Mean initial return (winsorized)	0.036	0.054	0.030	0.053	0.141

8.5. Appendix E – Multicollinearity Tests

Table 24: Pearson Correlation matrix

This table presents the correlation of all research variables. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ, the cultural dimensions scores are from Hofstede's website and people's information is from the company's prospectus.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
	UNDP	DM_FEM _BOARD	DM_ FEM_ TOP	PFEM_ BOARD	PFEM_ TOP	CFO_ FEM	LN(BOARD_ SIZE)	LN(TOP _SIZE)	CEO_ DUAL	GP_TA	LN(1+ DELAY)	LAG_ UNDP
1.	1.000											
2.	0.074	1.000										
3.	0.064	0.172***	1.000									
4.	0.106*	0.783***	0.224***	1.000								
5.	0.081	0.189***	0.841***	0.277***	1.000							
6.	-0.043	0.087	0.428***	0.118**	0.492***	1.000						
7.	-0.075	0.309***	0.041	0.124**	-0.044	-0.039	1.000					
8.	0.020	0.188***	0.522***	0.188***	0.353***	0.154***	0.267***	1.000				
9.	-0.016	-0.062	0.170***	-0.068	0.078	0.007	0.093*	0.085	1.000			
10.	0.075	-0.168***	0.022	-0.147***	0.049	0.035	-0.365***	-0.080	-0.025	1.000		
11.	0.061	-0.078	-0.146***	-0.068	-0.121**	-0.027	-0.022	-0.082	0.015	0.036	1.000	
12.	-0.082	0.000	-0.041	-0.050	-0.050	-0.022	0.215***	0.045	0.112**	-0.091	0.011	1.000
13.	-0.048	0.162***	-0.060	0.137**	-0.081	-0.046	0.121**	0.065	-0.052	-0.278***	-0.035	-0.025
14.	-0.028	0.157***	-0.062	0.092*	-0.135**	-0.076	0.558***	0.111**	0.082	-0.755***	-0.039	0.107*
15.	-0.021	-0.055	-0.083	-0.077	-0.066	0.013	-0.058	-0.028	-0.033	0.135**	0.067	0.000
16.	0.268***	-0.040	0.105*	0.035	0.080	0.071	-0.147***	0.097*	0.037	0.253***	0.077	-0.011
17.	-0.053	-0.167***	-0.026	-0.191***	-0.085	-0.023	0.199***	-0.018	0.367***	-0.068	0.286***	0.107*
18.	-0.019	-0.004	0.037	0.025	0.050	0.043	-0.072	0.010	-0.055	0.015	-0.219***	-0.049
19.	-0.002	-0.181***	-0.300***	-0.262***	-0.318***	-0.156***	0.104*	-0.252***	0.095*	0.016	0.381***	0.046
20.	0.008	-0.198***	-0.180***	-0.235***	-0.216***	-0.078	0.136**	-0.140**	0.266***	-0.043	0.431***	0.099*
21.	0.025	-0.173***	-0.313***	-0.254***	-0.281***	-0.148***	-0.076	-0.312***	-0.047	0.100*	0.050	0.040
22.	-0.033	0.140**	0.273***	0.162***	0.282***	0.120**	-0.077	0.222***	-0.096*	0.038	-0.520***	-0.051

Table 21: Correlation matrix (continued)

This table presents the correlation of all research variables. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ, the cultural dimensions scores are from Hofstede's website and people's information is from the company's prospectus.

	13. LN(1+ AGE)	14. LN(TA)	15. HIGH_ TECH	16. STD19	17. PDI	18. IDV	19. MAS	20. UAI	21. LTO	22. IVR
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.	1.000									
14.	0.196***	1.000								
15.	0.004	-0.146***	1.000							
16.	-0.221***	-0.208***	0.058	1.000						
17.	-0.045	0.113**	-0.040	-0.102*	1.000					
18.	0.008	-0.042	-0.038	-0.089	-0.207***	1.000				
19.	-0.049	0.076	0.109*	0.034	0.371***	-0.075	1.000			
20.	-0.056	0.119**	0.025	-0.041	0.875***	-0.395***	0.622***	1.000		
21.	-0.009	0.019	0.202***	0.043	0.071	0.150***	0.515***	0.285***	1.000	
22.	-0.002	-0.105*	-0.086	-0.053	-0.491***	0.346***	-0.842***	-0.766***	-0.303***	1.000

Table 25: VIF testing for the models with DM_FEM_BOARD

This table presents the VIF values of each explanatory variable for all main models (using DM_FEM_BOARD as variable of interest). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)				**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
DM_FEM_BOARD	1.095	1.137	1.251	12.510	72.064	9.429	18.013	23.739	18.511
LN(BOARD_SIZE)	1.108	1.347	2.246	2.458	2.510	2.276	2.356	2.400	2.310
CEO_DUAL	1.023	1.086	1.141	1.306	1.142	1.164	1.179	1.169	1.169
GP_PTA		1.220	3.383	3.339	3.387	3.342	3.184	3.315	3.325
LN(1+DELAY)		1.048	1.216	1.423	1.305	1.349	1.454	1.291	1.633
LAG_UNDP		1.153	1.252	1.259	1.257	1.257	1.242	1.253	1.251
LN(1+AGE)			1.361	1.373	1.440	1.376	1.379	1.328	1.376
LN(TA)			4.537	4.607	4.618	4.544	4.349	4.668	4.612
HIGH_TECH			1.223	1.241	1.243	1.298	1.278	1.561	1.274
STD19			1.166	1.214	1.237	1.208	1.164	1.174	1.171
CD				3.785	2.980	4.526	4.107	4.625	4.400
CD*DM_FEM_BOARD				13.969	69.388	10.537	19.054	24.608	21.877

Table 26: VIF testing for the models with PFEM_BOARD

This table presents the VIF values of each explanatory variable for all main models (using PFEM_BOARD as variable of interest). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)				**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
PFEM_BOARD	1.017	1.043	1.131	11.633	103.567	6.923	15.742	21.131	16.712
LN(BOARD_SIZE)	1.029	1.243	2.093	2.234	2.178	2.109	2.160	2.157	2.108
CEO_DUAL	1.019	1.087	1.147	1.330	1.149	1.171	1.194	1.185	1.180
GP_PTA		1.225	3.374	3.308	3.378	3.298	3.192	3.387	3.227
LN(1+DELAY)		1.046	1.212	1.416	1.330	1.370	1.438	1.325	1.593
LAG_UNDP		1.158	1.265	1.288	1.272	1.278	1.282	1.271	1.296
LN(1+AGE)			1.357	1.355	1.405	1.364	1.366	1.336	1.355
LN(TA)			4.563	4.586	4.705	4.607	4.377	4.760	4.684
HIGH_TECH			1.226	1.265	1.259	1.306	1.304	1.581	1.260
STD19			1.167	1.231	1.207	1.175	1.174	1.164	1.168
CD				2.735	2.222	2.852	2.844	3.218	3.040
CD*PFEM_BOARD				13.042	104.785	7.138	16.023	20.638	19.255

Table 27: VIF testing for the models with DM_FEM_TOP

This table presents the VIF values of each explanatory variable for all main models (using DM_FEM_TOP as variable of interest). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)				**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
DM_FEM_TOP	1.331	1.592	1.685	11.836	61.566	8.157	15.931	21.852	19.736
LN(TOP_SIZE)	1.300	1.630	1.685	1.779	1.847	1.682	1.774	1.737	1.742
CEO_DUAL	1.029	1.149	1.219	1.390	1.271	1.297	1.290	1.307	1.268
GP_PTA		1.138	3.332	3.344	3.400	3.383	3.360	3.287	3.330

Cultural Dimension (CD)				PDI	IDV	MAS	UAI	LTO	IVR
	(1)	(2)	(3)	(1)	(2)	(3)	(4)	(5)	(6)
LN(1+DELAY)		1.044	1.179	1.407	1.234	1.320	1.439	1.219	1.608
LAG_UNDP		1.124	1.189	1.195	1.187	1.230	1.222	1.196	1.282
LN(1+AGE)			1.351	1.360	1.389	1.387	1.384	1.359	1.421
LN(TA)			3.236	3.274	3.517	3.355	3.297	3.275	3.427
HIGH_TECH			1.160	1.187	1.271	1.238	1.215	1.408	1.221
STD19			1.153	1.223	1.185	1.263	1.197	1.352	1.229
CD				2.026	2.114	2.686	2.599	2.463	2.882
CD*DM_FEM_TOP				12.028	62.198	6.799	15.474	19.667	22.144

Table 28: VIF testing for the models with PFEM_TOP

This table presents the VIF values of each explanatory variable for all main models (using PFEM_TOP as variable of interest). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)				PDI	IDV	MAS	UAI	LTO	IVR
	(1)	(2)	(3)	(1)	(2)	(3)	(4)	(5)	(6)
PFEM_TOP	1.106	1.295	1.423	14.439	54.105	7.923	20.626	15.631	21.187
LN(TOP_SIZE)	1.103	1.321	1.365	1.445	1.544	1.433	1.427	1.485	1.455
CEO_DUAL	1.011	1.118	1.178	1.360	1.218	1.215	1.225	1.288	1.210
GP_PTA		1.130	3.326	3.377	3.458	3.430	3.366	3.248	3.388
LN(1+DELAY)		1.042	1.184	1.414	1.240	1.319	1.429	1.221	1.592
LAG_UNDP		1.098	1.168	1.211	1.170	1.225	1.235	1.185	1.257
LN(1+AGE)			1.422	1.406	1.441	1.454	1.414	1.433	1.437
LN(TA)			3.227	3.289	3.595	3.416	3.372	3.222	3.574
HIGH_TECH			1.134	1.144	1.218	1.220	1.176	1.415	1.188
STD19			1.155	1.228	1.187	1.247	1.216	1.321	1.234
CD				1.853	1.917	2.238	2.189	2.370	2.421
CD*PFEM_TOP				14.755	56.083	7.423	20.322	15.397	23.088

Table 29: VIF testing for the models with CFO_FEM

This table presents the VIF values of each explanatory variable for all main models (using CFO_FEM as variable of interest). Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). The variables' descriptions can be found in Appendix A. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)				PDI	IDV	MAS	UAI	LTO	IVR
	(1)	(2)	(3)	(1)	(2)	(3)	(4)	(5)	(6)
CFO_FEM	1.000	1.020	1.147	13.240	42.449	7.858	15.234	13.603	21.207
CEO_DUAL	1.000	1.081	1.108	1.239	1.110	1.132	1.153	1.130	1.133
GP_PTA		1.075	3.361	3.390	3.639	3.459	3.420	3.309	3.447
LN(1+DELAY)		1.045	1.204	1.410	1.237	1.318	1.441	1.239	1.564
LAG_UNDP		1.062	1.140	1.158	1.146	1.165	1.169	1.156	1.167
LN(1+AGE)			1.337	1.391	1.344	1.398	1.398	1.347	1.369
LN(TA)			3.110	3.165	3.488	3.196	3.212	3.119	3.271
HIGH_TECH			1.201	1.233	1.261	1.362	1.297	1.501	1.336
STD19			1.160	1.296	1.246	1.198	1.230	1.197	1.179
CD				1.694	1.551	1.528	1.703	1.559	1.838
CD*CFO_FEM				14.166	43.053	7.725	15.731	13.548	21.829

8.6. Appendix F: Robustness Checks RQ1 – Blau and Shannon's Indices

Table 30: Descriptive statistics Blau and Shannon's indices

This table presents the descriptive statistics of the variables used in the robustness checks. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). BLAU_BOARD and BLAU_TOP correspond to the gender diversity of the board and top management team, respectively, computed with the Blau index. SHANNON_BOARD and SHANNON _TOP correspond to the gender diversity of the board and top management team, respectively, computed with the Shannon index. Information related with people is from the company's prospectus.

Variable	Mean	Min	Median	Max	Std. Dev.	N
BLAU_BOARD	0.212	0.000	0.245	0.500	0.186	342
BLAU_TOP	0.145	0.000	0.000	0.500	0.182	340
SHANNON_BOARD	0.323	0.000	0.410	0.693	0.270	342
SHANNON_TOP	0.221	0.000	0.000	0.693	0.268	340

Table 31: Multivariate regression analysis of RQ1 - Board Level - Robustness Checks (Blau & Shannon indices)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variables are either BLAU_BOARD or SHANNON_BOARD. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

	(1)	(2)	(3)	(1)	(2)	(3)
α	0.088**	0.036	-0.102	0.089**	0.038	-0.101
	[1.975]	(0.718)	(-1.554)	[2.011]	(0.760)	(-1.538)
BLAU_BOARD	0.095*	0.107**	0.093*			
	[1.920]	(2.052)	(1.832)			
SHANNON_BOARD				0.064*	0.073**	0.065*
				[1.858]	(2.002)	(1.833)
LN(BOARD_SIZE)	-0.032	-0.016	-0.026	-0.033	-0.017	-0.027
	[-1.448]	(-0.736)	(-1.003)	[-1.484]	(-0.793)	(-1.054)
CEO_DUAL	0.012	0.016	0.007	0.012	0.016	0.007
	[0.423]	(0.509)	(0.218)	[0.425]	(0.514)	(0.224)
GP_PTA		0.008	0.012		0.008	0.012
		(1.066)	(1.110)		(1.052)	(1.107)
LN(1+DELAY)		0.018	0.014		0.018	0.014
		(1.177)	(0.924)		(1.179)	(0.929)
LAG_UNDP		-0.041*	-0.041*		-0.042*	-0.041*
		(-1.758)	(-1.716)		(-1.768)	(-1.720)
LN(1+AGE)			0.003			0.003
			(0.381)			(0.378)
LN(TA)			0.011			0.011
			(1.334)			(1.342)
HIGH_TECH			-0.014			-0.014
			(-0.728)			(-0.737)
STD19			4.718***			4.735***
			(3.925)			(3.938)
R^2 (Adjusted R^2) %	1.487	3.131	9.861	1.418	3.074	9.865
	(0.607)	(1.343)	(7.053)	(0.538)	(1.285)	(7.057)
F-statistic	1.690	2.147**	3.048***	1.611	2.113*	3.056***
N	340	332	332	340	332	332

Table 32: Multivariate regression analysis of RQ1 - Top Management Team Level - Robustness Checks (Blau & Shannon indices)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variables are either BLAU_TOP or SHANNON_TOP. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

	(1)	(2)	(3)	(1)	(2)	(3)
α	0.042	0.017	-0.122*	0.043	0.018	-0.120*
	[1.550]	(0.621)	(-1.750)	[1.586]	(0.642)	(-1.733)
BLAU_TOP	0.092*	0.064	0.065			
	[1.706]	(1.100)	(1.093)			
SHANNON_TOP				0.063*	0.044	0.043
				[1.692]	(1.076)	(1.047)
LN(TOP_SIZE)	-0.006	0.002	-0.009	-0.007	0.001	-0.009
	[-0.361]	(0.121)	(-0.580)	[-0.413]	(0.082)	(-0.593)
CEO_DUAL	-0.001	0.007	-0.001	-0.002	0.006	-0.002
	[-0.035]	(0.214)	(-0.042)	[-0.057]	(0.201)	(-0.051)
GP_PTA		0.007	0.011		0.008	0.011
		(1.016)	(0.992)		(1.017)	(0.986)
LN(1+DELAY)		0.019	0.014		0.019	0.014
		(1.189)	(0.901)		(1.194)	(0.901)
LAG_UNDP		-0.046**	-0.046**		-0.046**	-0.046**
		(-2.050)	(-2.016)		(-2.045)	(-2.014)
LN(1+AGE)			0.005			0.005
			(0.649)			(0.645)
LN(TA)			0.009			0.009
			(1.311)			(1.297)
HIGH_TECH			-0.014			-0.014
			(-0.782)			(-0.783)
STD19			4.884***			4.880***
			(3.998)			(3.997)
R^2 (Adjusted R^2) %	0.883	2.275	9.150	0.868	2.259	9.118
	(-0.002)	(0.471)	(6.320)	(-0.017)	(0.455)	(6.286)
F-statistic	0.998	1.713	2.633***	0.981	1.720	2.622***
N	340	332	332	340	332	332

Table 33: Multivariate regression analysis of RQ2 - Board Level - Robustness Checks (Shannon index)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is SHANNON_BOARD and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	-0.149*	-0.138	-0.136*	-0.185**	-0.207**	-0.060
	(-1.860)	(-0.963)	(-1.888)	(-2.266)	(-2.141)	(-0.598)
SHANNON_BOARD	0.221**	0.067	0.151*	0.259**	0.270*	-0.025
	(2.088)	(0.215)	(1.663)	(2.054)	(1.857)	(-0.186)
LN(BOARD_SIZE)	-0.029	-0.026	-0.028	-0.033	-0.017	-0.028

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
	(-1.086)	(-1.028)	(-1.086)	(-1.248)	(-0.642)	(-1.086)
CEO_DUAL	0.013	0.007	0.010	0.005	0.013	0.008
	(0.389)	(0.235)	(0.338)	(0.145)	(0.406)	(0.260)
GP_PTA	0.014	0.012	0.014	0.015	0.011	0.013
	(1.300)	(1.105)	(1.253)	(1.379)	(1.033)	(1.189)
LN(1+DELAY)	0.018	0.016	0.015	0.013	0.017	0.013
	(1.106)	(0.990)	(0.944)	(0.788)	(1.104)	(0.713)
LAG_UNDP	-0.041*	-0.041*	-0.041*	-0.040	-0.042*	-0.040
	(-1.691)	(-1.703)	(-1.696)	(-1.627)	(-1.732)	(-1.641)
LN(1+AGE)	0.003	0.003	0.003	0.003	0.003	0.003
	(0.402)	(0.372)	(0.319)	(0.435)	(0.326)	(0.329)
LN(TA)	0.013	0.011	0.012	0.013	0.009	0.012
	(1.511)	(1.354)	(1.485)	(1.567)	(1.095)	(1.388)
HIGH_TECH	-0.015	-0.014	-0.014	-0.015	-0.020	-0.014
	(-0.790)	(-0.719)	(-0.725)	(-0.802)	(-0.955)	(-0.721)
STD19	4.638***	4.775***	4.462***	4.614***	4.508***	4.591***
	(3.826)	(3.917)	(3.6629	(3.859)	(3.740)	(3.803)
CD	0.001	0.000	0.001	0.001	0.002	-0.001
	(0.860)	(0.312)	(0.881)	(1.536)	(1.627)	(-0.638)
CD*SHANNON_BOARD	-0.004*	0.000	-0.002	-0.003*	-0.003	0.002
	(-1.707)	(-0.009)	(-1.130)	(-1.679)	(-1.501)	(0.685)
R^2 (Adjusted R^2) %	10.622	9.915	10.372	10.836	10.634	10.060
	(7.260)	(6.526)	(7.000)	(7.482)	(7.272)	(6.677)
F-statistic	2.682***	2.552***	2.601***	2.656***	2.547***	2.573***
N	332	332	332	332	332	332

Table 34: Multivariate regression analysis of RQ2 - Top Management Team Level - Robustness Checks (Blau index)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is BLAU_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
α	-0.100	-0.081	-0.117	-0.137*	-0.133	-0.100
	(-1.269)	(-0.638)	(-1.625)	(-1.721)	(-1.591)	(-1.005)
BLAU_TOP	0.096	-0.465	0.059	0.149	-0.060	-0.046
	(0.621)	(-1.312)	(0.460)	(0.815)	(-0.302)	(-0.219)
LN(TOP_SIZE)	-0.009	-0.009	-0.010	-0.009	-0.007	-0.009
	(-0.599)	(-0.585)	(-0.634)	(-0.565)	(-0.436)	(-0.555)
CEO_DUAL	0.010	-0.003	0.000	0.000	-0.004	0.001
	(0.289)	(-0.090)	(-0.006)	(0.002)	(-0.128)	(0.028)
GP_PTA	0.011	0.011	0.011	0.011	0.009	0.011
	(0.987)	(0.985)	(1.001)	(1.012)	(0.861)	(0.997)
LN(1+DELAY)	0.018	0.015	0.016	0.014	0.014	0.014
	(1.097)	(0.949)	(0.970)	(0.795)	(0.905)	(0.765)
LAG_UNDP	-0.044*	-0.044*	-0.046**	-0.045**	-0.046**	-0.045**
	(-1.948)	(-1.929)	(-1.999)	(-1.996)	(-2.018)	(-2.009)
LN(1+AGE)	0.004	0.005	0.005	0.005	0.006	0.005
	(0.559)	(0.641)	(0.634)	(0.585)	(0.697)	(0.562)
LN(TA)	0.010	0.010	0.010	0.009	0.009	0.009

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
	(1.356)	(1.324)	(1.332)	(1.285)	(1.230)	(1.245)
HIGH_TECH	-0.015	-0.013	-0.014	-0.014	-0.016	-0.015
	(-0.800)	(-0.700)	(-0.733)	(-0.749)	(-0.817)	(-0.779)
STD19	4.752***	4.945***	4.904***	4.843***	4.988***	4.821***
	(3.807)	(4.017)	(3.886)	(3.903)	(3.877)	(3.861)
CD	-0.001	-0.001	0.000	0.000	0.000	0.000
	(-0.703)	(-0.513)	(-0.234)	(0.390)	(0.233)	(-0.353)
CD*BLAU_TOP	-0.001	0.008	0.000	-0.001	0.002	0.002
	(-0.264)	(1.472)	(0.020)	(-0.552)	(0.749)	(0.518)
R^2 (Adjusted R^2) %	9.405	9.588	9.182	9.253	9.417	9.266
	(5.997)	(6.187)	(5.766)	(5.839)	(6.009)	(5.852)
F-statistic	2.372***	2.290***	2.216**	2.212**	2.241***	2.216**
N	332	332	332	332	332	332

Table 35: Multivariate regression analysis of RQ2 - Top Management Team Level - Robustness Checks (Shannon index)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is SHANNON_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
α	-0.097	-0.087	-0.116	-0.132*	-0.129	-0.100
	(-1.222)	(-0.686)	(-1.617)	(-1.663)	(-1.540)	(-1.005)
SHANNON_TOP	0.054	-0.266	0.044	0.087	-0.058	-0.025
	(0.511)	(-1.088)	(0.488)	(0.704)	(-0.412)	(-0.176)
LN(TOP_SIZE)	-0.010	-0.010	-0.010	-0.009	-0.008	-0.009
	(-0.606)	(-0.600)	(-0.643)	(-0.576)	(-0.479)	(-0.568)
CEO_DUAL	0.009	-0.003	0.000	0.000	-0.005	0.000
	(0.270)	(-0.082)	(0.001)	(-0.015)	(-0.155)	(0.016)
GP_PTA	0.011	0.011	0.011	0.011	0.009	0.011
	(0.977)	(0.984)	(0.997)	(1.001)	(0.851)	(0.993)
LN(1+DELAY)	0.018	0.015	0.016	0.014	0.014	0.014
	(1.098)	(0.954)	(0.972)	(0.797)	(0.904)	(0.766)
LAG_UNDP	-0.044*	-0.044*	-0.046**	-0.045**	-0.046**	-0.045**
	(-1.950)	(-1.938)	(-1.997)	(-2.005)	(-2.013)	(-2.012)
LN(1+AGE)	0.005	0.005	0.005	0.005	0.006	0.005
	(0.565)	(0.636)	(0.619)	(0.593)	(0.708)	(0.564)
LN(TA)	0.010	0.010	0.010	0.009	0.009	0.009
	(1.342)	(1.320)	(1.317)	(1.279)	(1.226)	(1.240)
HIGH_TECH	-0.015	-0.013	-0.014	-0.014	-0.016	-0.014
	(-0.807)	(-0.709)	(-0.736)	(-0.754)	(-0.808)	(-0.775)
STD19	4.752***	4.936***	4.890***	4.851***	5.013***	4.824***
	(3.809)	(4.009)	(3.876)	(3.912)	(3.891)	(3.864)
CD	-0.001	-0.001	0.000	0.000	0.000	0.000
	(-0.769)	(-0.432)	(-0.196)	(0.309)	(0.156)	(-0.322)
CD*SHANNON_TOP	0.000	0.004	0.000	-0.001	0.002	0.001
	(-0.137)	(1.250)	(-0.0454)	(-0.425)	(0.852)	(0.470)
R^2 (Adjusted R^2) %	9.366	9.469	9.153	9.178	9.426	9.213
	(5.957)	(6.064)	(5.736)	(5.762)	(6.019)	(5.797)
F-statistic	2.371***	2.247***	2.206**	2.199**	2.234**	2.201**

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
N	332	332	332	332	332	332

8.7. Appendix G: Robustness Checks RQ1 – Year-Fixed Effects

Table 36: Multivariate regression analysis of RQ1 - Robustness Checks (Year-Fixed Effects)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variables can vary as presented and, consequently, the LN(SIZE) can be either LN (BOARD_SIZE) or LN(TOP_SIZE). The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

	(3)	(3)	(3)	(3)	(3)
α	-0.025	-0.045	-0.044	-0.060	-0.020
	(-0.342)	(-0.578)	(-0.598)	(-0.757)	(-0.269)
DM_FEM_BOARD	0.034				
	(1.386)				
DM_FEM_TOP		0.018			
		(0.798)			
PFEM_ BOARD			0.130*		
			(1.670)		
PFEM_ TOP				0.101	
				(1.344)	
CFO_FEM					-0.035
					(-1.118)
LN(SIZE)	-0.037	-0.008	-0.031	-0.008	
	(-1.238)	(-0.452)	(-1.086)	(-0.512)	
CEO_DUAL	-0.001	-0.008	-0.001	-0.008	-0.006
	(-0.029)	(-0.247)	(-0.044)	(-0.262)	(-0.209)
GP_PTA	0.009	0.007	0.010	0.008	0.003
	(0.794)	(0.588)	(0.895)	(0.673)	(0.257)
LN(1+DELAY)	0.013	0.013	0.014	0.014	0.010
	(0.771)	(0.749)	(0.795)	(0.807)	(0.621)
LAG_UNDP	-0.095*	-0.095*	-0.095*	-0.094*	-0.096**
	(-1.928)	(-1.932)	(-1.948)	(-1.939)	(-1.986)
LN(1+AGE)	0.004	0.006	0.004	0.006	0.002
	(0.437)	(0.654)	(0.422)	(0.690)	(0.284)
LN(TA)	0.013	0.009	0.014	0.011	0.006
	(1.491)	(1.237)	(1.525)	(1.388)	(0.836)
HIGH_TECH	-0.011	-0.012	-0.009	-0.011	-0.010
	(-0.591)	(-0.624)	(-0.471)	(-0.591)	(-0.544)
STD19	4.465***	4.609***	4.354***	4.594***	4.859***
	(3.467)	(3.586)	(3.382)	(3.558)	(3.662)
Year-fixed effects	Included	Included	Included	Included	Included
R^2 (Adjusted R^2) %	12.803	12.123	13.107	12.485	12.434
	(6.278)	(5.547)	(6.605)	(5.936)	(6.115)
F-statistic	1.832**	1.622**	1.882**	1.642**	1.837**
N	317	317	317	317	313

Table 37: Multivariate regression analysis of RQ2 – DM_FEM_BOARD - Robustness Checks (Year-Fixed Effects)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is DM_FEM_BOARD and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	-0.059	0.060	-0.053	-0.111	-0.115	0.008
	(-0.659)	(0.372)	(-0.656)	(-1.184)	(-1.057)	(0.072)
DM_FEM_BOARD	0.104	-0.072	0.070	0.144*	0.142	-0.005
	(1.538)	(-0.474)	(1.225)	(1.806)	(1.481)	(-0.058)
LN(BOARD_SIZE)	-0.039	-0.039	-0.036	-0.042	-0.028	-0.037
	(-1.230)	(-1.265)	(-1.169)	(-1.374)	(-0.898)	(-1.194)
CEO_DUAL	0.006	-0.004	0.001	-0.004	0.002	0.000
	(0.188)	(-0.126)	(0.046)	(-0.137)	(0.079)	(-0.017)
GP_PTA	0.011	0.009	0.010	0.012	0.009	0.010
	(0.946)	(0.792)	(0.909)	(1.070)	(0.811)	(0.843)
LN(1+DELAY)	0.018	0.012	0.016	0.013	0.018	0.012
	(0.981)	(0.678)	(0.839)	(0.670)	(0.988)	(0.585)
LAG_UNDP	-0.092*	-0.096*	-0.093*	-0.091*	-0.093*	-0.093*
	(-1.884)	(-1.938)	(-1.922)	(-1.882)	(-1.886)	(-1.929)
LN(1+AGE)	0.004	0.003	0.003	0.005	0.003	0.004
	(0.441)	(0.397)	(0.403)	(0.525)	(0.397)	(0.425)
LN(TA)	0.014	0.014	0.014	0.015	0.012	0.013
	(1.587)	(1.560)	(1.562)	(1.639)	(1.342)	(1.445)
HIGH_TECH	-0.013	-0.012	-0.011	-0.014	-0.014	-0.012
	(-0.698)	(-0.621)	(-0.588)	(-0.740)	(-0.688)	(-0.601)
STD19	4.330***	4.418***	4.261***	4.300***	4.212***	4.365***
	(3.333)	(3.340)	(3.251)	(3.352)	(3.218)	(3.387)
CD	0.001	-0.001	0.000	0.001	0.001	-0.001
	(0.441)	(-0.668)	(0.448)	(1.297)	(1.063)	(-0.423)
CD*DM_FEM_BOARD	-0.002	0.002	-0.001	-0.002	-0.002	0.001
	(-1.263)	(0.711)	(-0.761)	(-1.561)	(-1.233)	(0.487)
Year-fixed effects	Included	Included	Included	Included	Included	Included
R^2 (Adjusted R^2) %	13.393	12.956	13.094	13.720	13.307	12.908
	(6.274)	(5.801)	(5.951)	(6.629)	(6.182)	(5.750)
F-statistic	1.731**	1.693**	1.690**	1.712**	1.669**	1.680**
N	317	317	317	317	317	317

Table 38: Multivariate regression analysis of RQ2 – PFEM_BOARD - Robustness Checks (Year-Fixed Effects)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is PFEM_BOARD and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	-0.076	-0.048	-0.079	-0.110	-0.124	0.010
	(-0.881)	(-0.308)	(-1.010)	(-1.279)	(-1.242)	(0.088)
PFEM_BOARD	0.398**	0.384	0.302**	0.466**	0.484*	-0.113
	(2.076)	(0.657)	(1.989)	(2.083)	(1.735)	(-0.468)
LN(BOARD_SIZE)	-0.031	-0.031	-0.030	-0.035	-0.021	-0.032
	(-1.086)	(-1.097)	(-1.067)	(-1.244)	(-0.743)	(-1.123)
CEO_DUAL	0.008	0.000	0.004	-0.003	0.005	0.001
	(0.246)	(-0.005)	(0.138)	(-0.095)	(0.148)	(0.020)
GP_PTA	0.012	0.010	0.012	0.012	0.011	0.011
	(1.030)	(0.887)	(1.056)	(1.100)	(0.913)	(0.989)
LN(1+DELAY)	0.018	0.013	0.016	0.012	0.017	0.012
	(0.997)	(0.734)	(0.856)	(0.634)	(0.958)	(0.599)
LAG_UNDP	-0.094*	-0.095*	-0.095**	-0.093*	-0.096**	-0.093*
	(-1.944)	(-1.940)	(-1.998)	(-1.946)	(-1.989)	(-1.929)
LN(1+AGE)	0.004	0.004	0.004	0.005	0.003	0.003
	(0.444)	(0.439)	(0.428)	(0.532)	(0.373)	(0.399)
LN(TA)	0.015*	0.014	0.015	0.015*	0.013	0.014
	(1.652)	(1.518)	(1.627)	(1.677)	(1.382)	(1.515)
HIGH_TECH	-0.011	-0.009	-0.010	-0.012	-0.012	-0.010
	(-0.594)	(-0.459)	(-0.529)	(-0.615)	(-0.591)	(-0.516)
STD19	4.246***	4.326***	4.079***	4.250***	4.140***	4.198***
	(3.255)	(3.299)	(3.146)	(3.309)	(3.173)	(3.268)
CD	0.000	0.000	0.001	0.001	0.001	-0.001
	(0.482)	(0.060)	(0.972)	(1.345)	(1.173)	(-0.776)
CD*PFEM_BOARD	-0.006*	-0.004	-0.005	-0.005*	-0.006	0.005
	(-1.801)	(-0.438)	(-1.560)	(-1.779)	(-1.408)	(1.000)
Year-fixed effects	Included	Included	Included	Included	Included	Included
R^2 (Adjusted R^2) %	13.973	13.170	13.978	14.134	13.736	13.479
	(6.902)	(6.033)	(6.907)	(7.077)	(6.646)	(6.367)
F-statistic	1.811**	1.832**	1.760**	1.762**	1.756**	1.728**
N	317	317	317	317	317	317

Table 39: Multivariate regression analysis of RQ2 – DM_FEM_TOP - Robustness Checks (Year-Fixed Effects)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is DM_FEM_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	0.005	-0.030	-0.047	-0.028	-0.023	-0.031
	(0.052)	(-0.216)	(-0.596)	(-0.314)	(-0.258)	(-0.281)
DM_FEM_TOP	-0.019	0.021	0.028	-0.010	-0.072	0.006
	(-0.315)	(0.145)	(0.560)	(-0.139)	(-0.846)	(0.075)
LN(TOP_SIZE)	-0.009	-0.008	-0.009	-0.008	-0.008	-0.007
	(-0.522)	(-0.450)	(-0.513)	(-0.475)	(-0.489)	(-0.404)
CEO_DUAL	0.000	-0.008	-0.005	-0.010	-0.012	-0.007
	(0.006)	(-0.265)	(-0.160)	(-0.329)	(-0.370)	(-0.224)
GP_PTA	0.006	0.007	0.007	0.006	0.006	0.007
	(0.514)	(0.577)	(0.636)	(0.545)	(0.500)	(0.598)
LN(1+DELAY)	0.018	0.012	0.015	0.012	0.012	0.011
	(0.979)	(0.692)	(0.827)	(0.644)	(0.745)	(0.574)
LAG_UNDP	-0.098**	-0.096*	-0.094*	-0.098**	-0.096*	-0.096**
	(-1.988)	(-1.929)	(-1.909)	(-2.002)	(-1.917)	(-1.968)
LN(1+AGE)	0.005	0.006	0.005	0.006	0.006	0.005
	(0.641)	(0.654)	(0.597)	(0.714)	(0.759)	(0.616)
LN(TA)	0.009	0.009	0.010	0.009	0.009	0.009
	(1.239)	(1.199)	(1.302)	(1.190)	(1.233)	(1.171)
HIGH_TECH	-0.014	-0.012	-0.011	-0.012	-0.011	-0.012
	(-0.725)	(-0.630)	(-0.582)	(-0.653)	(-0.576)	(-0.624)
STD19	4.476***	4.586***	4.553***	4.651***	4.833***	4.573***
	(3.433)	(3.495)	(3.416)	(3.594)	(3.627)	(3.469)
CD	-0.001	0.000	0.000	0.000	0.000	0.000
	(-1.417)	(-0.149)	(-0.087)	(-0.271)	(-0.423)	(-0.210)
CD*DM_FEM_TOP	0.001	0.000	0.000	0.000	0.002	0.000
	(0.743)	(-0.019)	(-0.283)	(0.471)	(1.168)	(0.162)
Year-fixed effects	Included	Included	Included	Included	Included	Included
R^2 (Adjusted R^2) %	12.590	12.132	12.208	12.203	12.529	12.141
	(5.405)	(4.910)	(4.992)	(4.987)	(5.340)	(4.920)
F-statistic	1.645**	1.525*	1.504*	1.552*	1.537*	1.493*
N	317	317	317	317	317	317

Table 40: Multivariate regression analysis of RQ2 – PFEM_TOP - Robustness Checks (Year-Fixed Effects)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is PFEM_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	-0.029	0.022	-0.058	-0.077	-0.060	-0.022

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
	(-0.322)	(0.155)	(-0.717)	(-0.878)	(-0.664)	(-0.198)
PFEM_TOP	0.076	-0.574	0.112	0.199	-0.043	-0.119
	(0.364)	(-1.201)	(0.682)	(0.821)	(-0.161)	(-0.485)
LN(TOP_SIZE)	-0.009	-0.008	-0.009	-0.007	-0.007	-0.007
	(-0.555)	(-0.503)	(-0.558)	(-0.483)	(-0.424)	(-0.425)
CEO_DUAL	0.002	-0.010	-0.007	-0.007	-0.010	-0.005
	(0.071)	(-0.333)	(-0.221)	(-0.228)	(-0.324)	(-0.160)
GP_PTA	0.007	0.007	0.008	0.008	0.007	0.008
	(0.638)	(0.648)	(0.693)	(0.704)	(0.601)	(0.687)
LN(1+DELAY)	0.019	0.013	0.016	0.013	0.014	0.012
	(1.017)	(0.756)	(0.841)	(0.682)	(0.816)	(0.622)
LAG_UNDP	-0.094*	-0.094*	-0.093*	-0.092*	-0.095*	-0.092*
	(-1.947)	(-1.924)	(-1.919)	(-1.930)	(-1.934)	(-1.940)
LN(1+AGE)	0.005	0.006	0.006	0.006	0.006	0.005
	(0.618)	(0.689)	(0.665)	(0.653)	(0.723)	(0.564)
LN(TA)	0.011	0.010	0.011	0.010	0.010	0.010
	(1.434)	(1.342)	(1.412)	(1.353)	(1.343)	(1.271)
HIGH_TECH	-0.012	-0.011	-0.011	-0.011	-0.012	-0.012
	(-0.643)	(-0.565)	(-0.559)	(-0.582)	(-0.597)	(-0.616)
STD19	4.452***	4.605***	4.567***	4.554***	4.684***	4.449***
	(3.394)	(3.490)	(3.424)	(3.479)	(3.492)	(3.347)
CD	-0.001	-0.001	0.000	0.000	0.000	-0.001
	(-1.057)	(-0.923)	(-0.134)	(0.395)	(0.015)	(-0.607)
CD*PFEM_TOP	0.001	0.010	0.000	-0.002	0.003	0.004
	(0.144)	(1.394)	(-0.130)	(-0.501)	(0.625)	(0.825)
Year-fixed effects	Included	Included	Included	Included	Included	Included
R^2 (Adjusted R^2) %	12.797	12.803	12.515	12.574	12.601	12.749
	(5.629)	(5.636)	(5.324)	(5.388)	(5.418)	(5.5779
F-statistic	1.775**	1.690**	1.719**	1.659**	1.666**	1.647**
N	317	317	317	317	317	317

Table 41: Multivariate regression analysis of RQ2 – CFO_FEM - Robustness Checks (Year-Fixed Effects)

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is PFEM_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
α	0.003	-0.001	-0.020	-0.019	-0.009	-0.014
	(0.038)	(-0.009)	(-0.270)	(-0.245)	(-0.108)	(-0.135)
CFO_FEM	-0.097	0.041	-0.065	-0.111	-0.073	0.018
	(-1.106)	(0.221)	(-0.953)	(-1.194)	(-0.645)	(0.150)
CEO_DUAL	0.000	-0.007	-0.008	-0.010	-0.008	-0.008
	(-0.008)	(-0.241)	(-0.267)	(-0.331)	(-0.255)	(-0.273)
GP_PTA	0.003	0.003	0.004	0.003	0.003	0.003
	(0.263)	(0.255)	(0.299)	(0.272)	(0.276)	(0.253)
LN(1+DELAY)	0.014	0.009	0.014	0.009	0.011	0.008
	(0.792)	(0.551)	(0.804)	(0.470)	(0.649)	(0.397)
LAG_UNDP	-0.093*	-0.095*	-0.092*	-0.093*	-0.095*	-0.095**
	(-1.932)	(-1.936)	(-1.914)	(-1.947)	(-1.961)	(-1.980)

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
LN(1+AGE)	0.003	0.003	0.003	0.003	0.003	0.003
	(0.294)	(0.293)	(0.326)	(0.387)	(0.296)	(0.335)
LN(TA)	0.007	0.006	0.008	0.007	0.007	0.006
	(0.915)	(0.799)	(0.973)	(0.866)	(0.899)	(0.799)
HIGH_TECH	-0.012	-0.010	-0.010	-0.012	-0.009	-0.011
	(-0.661)	(-0.541)	(-0.500)	(-0.619)	(-0.447)	(-0.559)
STD19	4.783***	4.792***	4.945***	4.931***	4.890***	4.913***
	(3.518)	(3.513)	(3.704)	(3.669)	(3.653)	(3.668)
CD	-0.001	0.000	0.000	0.000	0.000	0.000
	(-1.075)	(-0.177)	(-0.617)	(-0.131)	(-0.401)	(-0.099)
CD*CFO_FEM	0.001	-0.001	0.001	0.001	0.001	-0.001
	(0.925)	(-0.400)	(0.611)	(1.036)	(0.363)	(-0.407)
Year-fixed effects	Included	Included	Included	Included	Included	Included
R^2 (Adjusted R^2) %	12.779	12.490	12.661	12.786	12.497	12.534
	(5.837)	(5.526)	(5.710)	(5.846)	(5.533)	(5.573)
F-statistic	1.834**	1.793**	1.837**	1.755**	1.692**	1.697**
N	313	313	313	313	313	313

8.8. Appendix H: Multivariate Analysis Results – RQ2

Table 42: Multivariate regression analysis of RQ2 – DM_FEM_TOP

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is DM_FEM_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
α	-0.080	-0.129	-0.114	-0.111	-0.109	-0.104
	(-1.007)	(-1.039)	(-1.616)	(-1.376)	(-1.337)	(-1.034)
DM_FEM_TOP	0.004	-0.033	0.033	0.015	-0.067	-0.004
	(0.072)	(-0.241)	(0.653)	(0.230)	(-0.818)	(-0.049)
LN(TOP_SIZE)	-0.010	-0.010	-0.010	-0.010	-0.009	-0.009
	(-0.593)	(-0.578)	(-0.602)	(-0.573)	(-0.558)	(-0.555)
CEO_DUAL	0.007	-0.002	0.002	-0.002	-0.007	0.000
	(0.220)	(-0.049)	(0.072)	(-0.058)	(-0.213)	(-0.006)
GP_PTA	0.010	0.010	0.011	0.010	0.009	0.010
	(0.920)	(0.951)	(0.976)	(0.939)	(0.807)	(0.957)
LN(1+DELAY)	0.018	0.015	0.016	0.014	0.014	0.014
	(1.105)	(0.961)	(0.961)	(0.816)	(0.877)	(0.775)
LAG_UNDP	-0.045**	-0.045**	-0.046**	-0.047**	-0.047**	-0.046**
	(-1.974)	(-1.988)	(-1.998)	(-2.049)	(-2.009)	(-2.026)
LN(1+AGE)	0.005	0.005	0.004	0.005	0.006	0.005
	(0.589)	(0.622)	(0.538)	(0.628)	(0.734)	(0.569)
LN(TA)	0.009	0.009	0.009	0.009	0.009	0.009
	(1.253)	(1.239)	(1.249)	(1.215)	(1.187)	(1.192)
HIGH_TECH	-0.016	-0.014	-0.014	-0.015	-0.015	-0.015
	(-0.859)	(-0.766)	(-0.754)	(-0.802)	(-0.785)	(-0.783)
STD19	4.750***	4.920***	4.838***	4.880***	5.103***	4.843***
	(3.816)	(4.003)	(3.857)	(3.950)	(3.981)	(3.890)
CD	-0.001	0.000	0.000	0.000	0.000	0.000
	(-1.066)	(0.135)	(-0.010)	(-0.066)	(-0.137)	(-0.176)
CD*DM_FEM_TOP	0.000	0.001	0.000	0.000	0.002	0.000

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
	(0.308)	(0.379)	(-0.369)	(0.069)	(1.193)	(0.301)
R^2 (Adjusted R^2) %	9.271	9.090	9.095	8.986	9.494	9.023
	(5.858)	(5.671)	(5.675)	(5.563)	(6.089)	(5.600)
F-statistic	2.373***	2.175**	2.212**	2.166**	2.214**	2.151**
N	332	332	332	332	332	332

Table 43: Multivariate regression analysis of RQ2 – PFEM_TOP

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is PFEM_TOP and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	PDI (1)	IDV (2)	MAS (3)	UAI (4)	LTO (5)	IVR (6)
α	-0.110	-0.080	-0.124*	-0.149*	-0.145*	-0.092
	(-1.393)	(-0.631)	(-1.722)	(-1.895)	(-1.719)	(-0.935)
PFEM_TOP	0.201	-0.736	0.121	0.295	-0.002	-0.130
	(0.988)	(-1.597)	(0.738)	(1.233)	(-0.008)	(-0.484)
LN(TOP_SIZE)	-0.010	-0.010	-0.010	-0.010	-0.007	-0.009
	(-0.684)	(-0.642)	(-0.671)	(-0.630)	(-0.436)	(-0.602)
CEO_DUAL	0.010	-0.004	0.000	0.001	-0.003	0.002
	(0.310)	(-0.124)	(0.015)	(0.025)	(-0.104)	(0.052)
GP_PTA	0.011	0.011	0.011	0.012	0.010	0.011
	(1.037)	(1.011)	(1.037)	(1.062)	(0.902)	(1.031)
LN(1+DELAY)	0.019	0.015	0.016	0.014	0.014	0.014
	(1.113)	(0.959)	(0.955)	(0.802)	(0.924)	(0.767)
LAG_UNDP	-0.043*	-0.043*	-0.045**	-0.044*	-0.046**	-0.044**
	(-1.932)	(-1.907)	(-1.990)	(-1.957)	(-2.016)	(-1.975)
LN(1+AGE)	0.005	0.005	0.005	0.005	0.006	0.004
	(0.564)	(0.675)	(0.636)	(0.573)	(0.698)	(0.542)
LN(TA)	0.010	0.010	0.010	0.010	0.009	0.009
	(1.424)	(1.365)	(1.376)	(1.330)	(1.272)	(1.278)
HIGH_TECH	-0.014	-0.012	-0.014	-0.013	-0.016	-0.015
	(-0.768)	(-0.680)	(-0.728)	(-0.730)	(-0.822)	(-0.784)
STD19	4.739***	4.955***	4.871***	4.805***	4.938***	4.781***
	(3.796)	(4.027)	(3.853)	(3.868)	(3.853)	(3.830)
CD	0.000	-0.001	0.000	0.000	0.000	-0.001
	(-0.543)	(-0.571)	(-0.087)	(0.652)	(0.396)	(-0.558)
CD*PFEM_TOP	-0.002	0.012	-0.001	-0.003	0.002	0.004
	(-0.621)	(1.785)	(-0.163)	(-0.969)	(0.532)	(0.835)
R^2 (Adjusted R^2) %	9.693	9.925	9.416	9.701	9.601	9.679
	(6.296)	(6.537)	(6.008)	(6.304)	(6.200)	(6.282)
F-statistic	2.406***	2.390***	2.267***	2.288***	2.297***	2.311***
N	332	332	332	332	332	332

Table 44: Multivariate regression analysis of RQ2 – CFO_FEM

The dependent variable in these regressions is UNDP, computed as the percentage change in the first trading day closing price from the offer price. The independent variable is CFO_FEM and the moderators (cultural dimensions) can vary as presented. The variables' descriptions can be found in Appendix A. Our sample comprises 342 IPOs undertaken between 2000 and 2020 on European Stock Exchanges (13 countries). White heteroscedasticity-consistent standard errors are used to estimate t-statistics when heteroscedasticity is present. White adjusted t-statistics are in parentheses, and conventional t-statistics are in brackets. *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. Information related to IPOs and firms is from Capital IQ and people's information is from the company's prospectus.

Cultural Dimension (CD)	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**	**IVR**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
α	-0.071	-0.127	-0.090	-0.088	-0.092	-0.114
	(-0.962)	(-1.069)	(-1.325)	(-1.217)	(-1.216)	(-1.253)
CFO_FEM	-0.105	0.100	-0.066	-0.119	-0.046	0.047
	(-1.301)	(0.573)	(-0.993)	(-1.354)	(-0.467)	(0.394)
CEO_DUAL	-0.006	-0.011	-0.012	-0.014	-0.012	-0.013
	(-0.193)	(-0.374)	(-0.385)	(-0.462)	(-0.380)	(-0.434)
GP_PTA	0.008	0.008	0.008	0.008	0.007	0.008
	(0.682)	(0.664)	(0.723)	(0.679)	(0.648)	(0.672)
LN(1+DELAY)	0.015	0.013	0.017	0.011	0.012	0.014
	(0.906)	(0.832)	(1.073)	(0.683)	(0.780)	(0.782)
LAG_UNDP	-0.039*	-0.041*	-0.040*	-0.041*	-0.041*	-0.041*
	(-1.724)	(-1.850)	(-1.741)	(-1.804)	(-1.850)	(-1.830)
LN(1+AGE)	0.002	0.002	0.002	0.003	0.002	0.002
	(0.241)	(0.195)	(0.223)	(0.313)	(0.191)	(0.265)
LN(TA)	0.007	0.007	0.008	0.007	0.007	0.007
	(1.010)	(0.893)	(1.085)	(0.990)	(0.913)	(0.967)
HIGH_TECH	-0.015	-0.012	-0.011	-0.014	-0.012	-0.012
	(-0.803)	(-0.640)	(-0.582)	(-0.772)	(-0.623)	(-0.646)
STD19	4.913***	4.911***	5.068***	5.030***	4.949***	5.024***
	(3.855)	(3.911)	(4.100)	(3.996)	(3.967)	(4.038)
CD	-0.001	0.001	0.000	0.000	0.000	0.000
	(-0.942)	(0.438)	(-0.819)	(-0.290)	(0.027)	(0.331)
CD*CFO_FEM	0.002	-0.002	0.001	0.002	0.000	-0.001
	(1.228)	(-0.726)	(0.711)	(1.289)	(0.189)	(-0.613)
R^2 (Adjusted R^2) %	9.212	8.941	9.176	9.315	8.845	9.007
	(6.042)	(5.761)	(6.004)	(6.149)	(5.662)	(5.830)
F-statistic	2.631***	2.531***	2.529***	2.548***	2.247**	2.407***
N	327	327	327	327	327	327